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EXCELL PRECISION CO., LTD.
www.excell-scale.com

User Manual
IP68 Waterproof Indicator
QW

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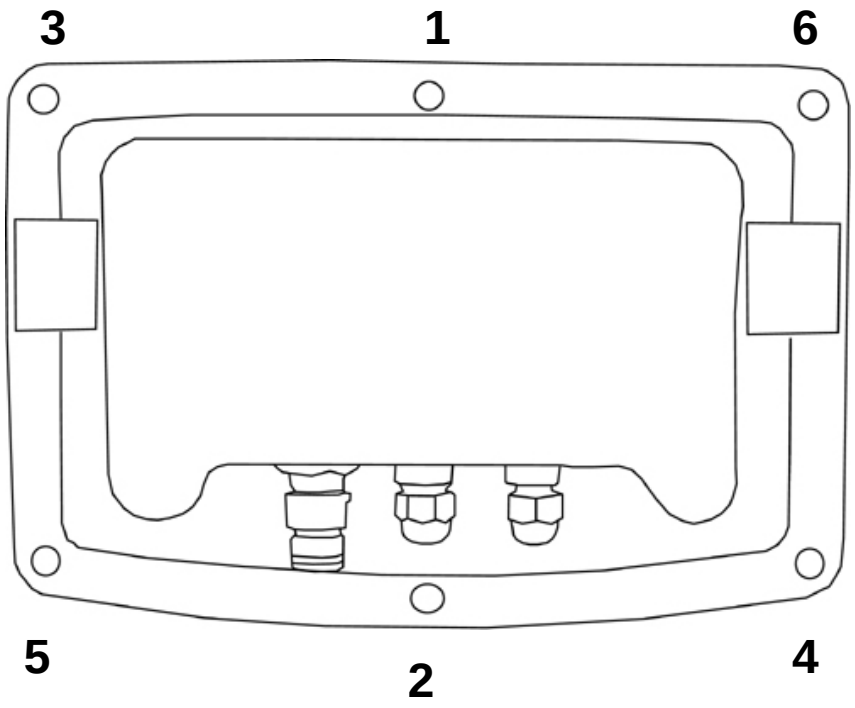
SPECIAL NOTICE

While installing the load cell, power cord hookup or replacing a new rechargeable battery, the indicator housing must be opened. It must be done by a technician assigned by your electronic indicator provider to avoid affecting the waterproof ability of this indicator.
Before opening the housing, make sure the indicator is dry, if there is any liquid on it, please wipe it with a clean cloth.

HOW TO INSTALL THE HOUSING：

After installing the load cell, power cord hookup or replacing a new rechargeable battery, the housing must be screwed by the assigned order as shown below. Screw lightly first, then screw them tight using a 12 kgf-cm torsion.
P.s. Please use a torsion-adjustable screw driver.

Screwing order:



Thank you for purchasing EXCELL WEIGHING INDICATOR, to help use the product properly, operate smoothly, and extend its life cycle, please read this manual carefully.

BEFORE USING THE SCALE

In order to use this scale correctly, we suggest that you read this manual carefully.

INSTRUCTIONS FOR USE

1. The load placed on the weigh pan must NOT exceed the maximum weighing capacity of the scale.
2. Protect the scale from high temperatures.
3. Avoid objects impacting with the scale. Do not drop loads onto the scale or subject the weigh pan to any strong shock loads.

PREPARING TO USE THE SCALE

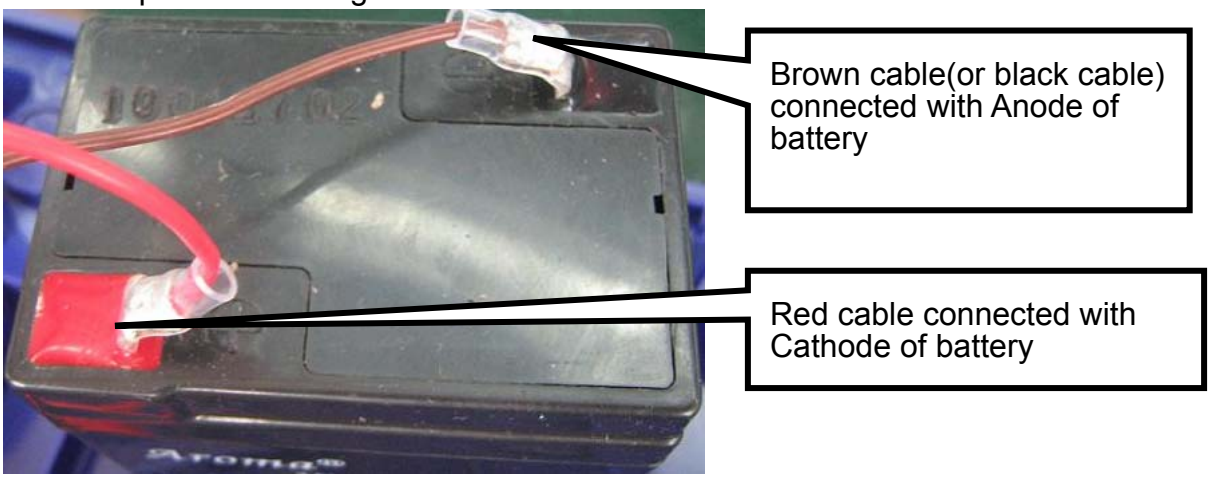
1. Locate the scale on a firm level surface free from vibrations for accurate weight readings.
2. Adjust the four levelling feet (if fitted) to set the scale pan level.
3. Avoid operating the scale in direct sunlight or drafts of any kind.
4. If possible avoid connecting the scale to ac power outlet sockets which are adjacent to other appliances to minimise the possibility of interference affecting the performance of the scale.
5. Remove any weight that might be on the weigh pan before the scale is switched on and avoid leaving weight on the pan for long periods of time
6. All goods weighed should be placed in the centre of the weigh pan for accurate weighing. The overall dimensions of the goods being weighed should not exceed the dimension of the weigh pan.
7. Once the scale has been powered on, it will go through an LCD display test and it is ready for use when the display shows zero.
8. The scale requires 15~20 minutes warm up before operation to ensure best accuracy
9. Please note when the symbol keeps flashing on the screen, the batteries need to be recharged.
10. Introduction of Storage Battery

Due to the storage battery adopt the advanced free-maintaining technique, customers need not to replenish electrolyte.
The scale should be recharged every 3 months to prevent failure of the internal rechargeable battery.

1. The battery should be charged for 8~10 hours.
2. The temperature of battery should below 45℃.

Maintaining

1. Please do not discharge with over-current when using the battery. Please charge the battery after discharging current.
2. Please take down the battery when the scale is not used for a long time or break the connection of cathode.
3. Do not short the battery terminals to check whether there is current. Please check whether the connection point is firm to guarantee good connection.
4. The battery should be replaced by specialized person. **No reverse-battery or the product will be damaged.**
   a) Anode of battery should be connected with Anode of product battery（usually red cable）
   b) Cathode of battery should be connected with Cathode of product battery (usually brown cable or black cable)
   c) See the picture following



Safety warnings

1. The electrolyte of battery is caustic which causes metal, cotton, etc to corrode.
2. The hydrogen will be resolved when using or charging the battery and it will cause explosion when approaches fire.

CHAPTER 1 INTRODUCTION

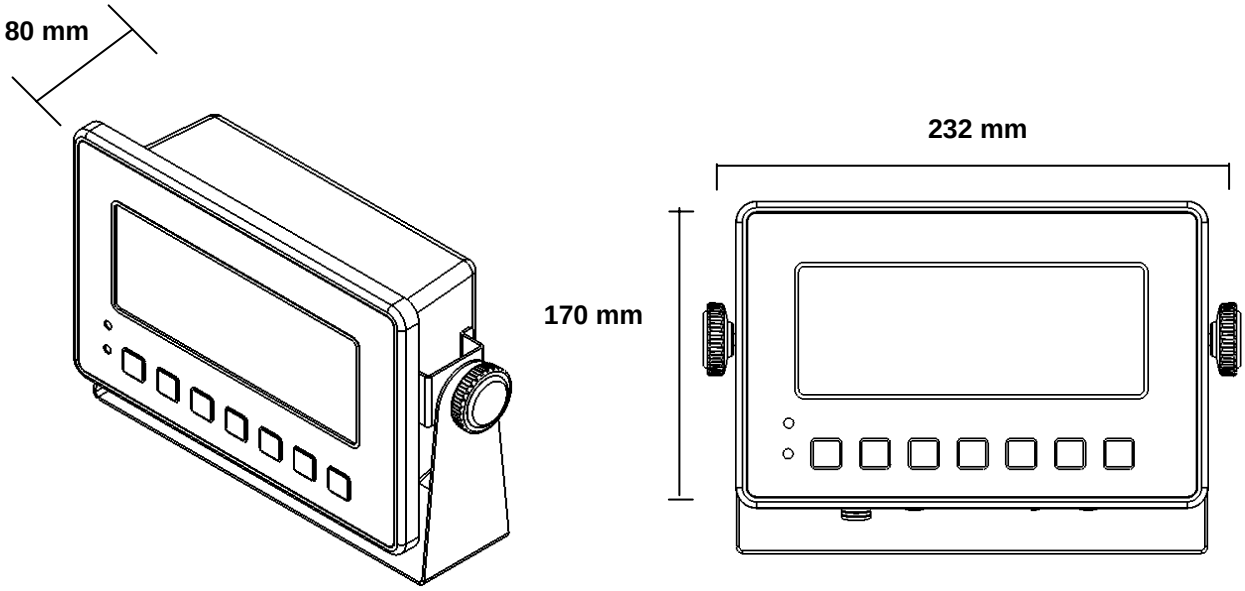
1-1 Product Features

- Extra-large and wide LCD display (175 x 70mm) 6 digits with 55mm height
- COOL WHITE LED backlight
- Type 304 stainless steel housing
- Sealed to IP68, Waterproof, mist-proof and dustproof (Only use cables of 3mm~5mm diameter to ensure correct sealing of the cable glands)
- Kilogram (kg) and pound (lb) weighing modes
- Full range tare; Pre-tare; Auto zero tracking; Sampling counting; Gross/Net indication
- Hold function; Check mode Lo/Hi/OK; Auto average unit weight; Animal scale function
- Adjustable gravity value
- Low power indication and auto power off
- AC/DC power in and rechargeable battery.
- Built-in RS-232
- Options: wireless transmitter, pressure release valve, foot switch, and RS-485

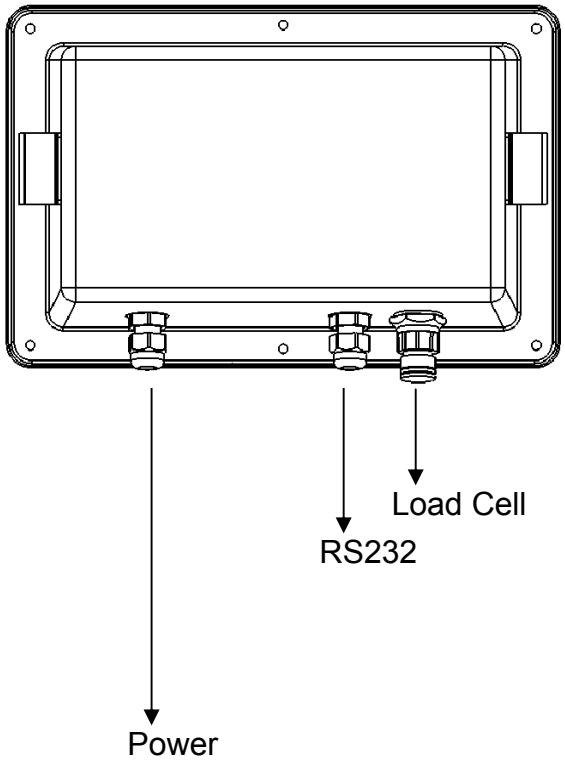
1-2 Specifications

- Analogue Input: Input Sensitivity 0.3μ V/d (Min.)
- Input Signal Range: -1mV~+14mV
- Input Zero Range: -1mV~+5mV
- Load Cell Excitation: 5V DC
- Load Cell Drive Capacity: Up to 8 x 350Ω load cells
- Non-linearity: 0.01% of full scale
- A/D Resolution: 500,000 counts (Maximum)
- Operating temperature: 0℃ ~ 40℃

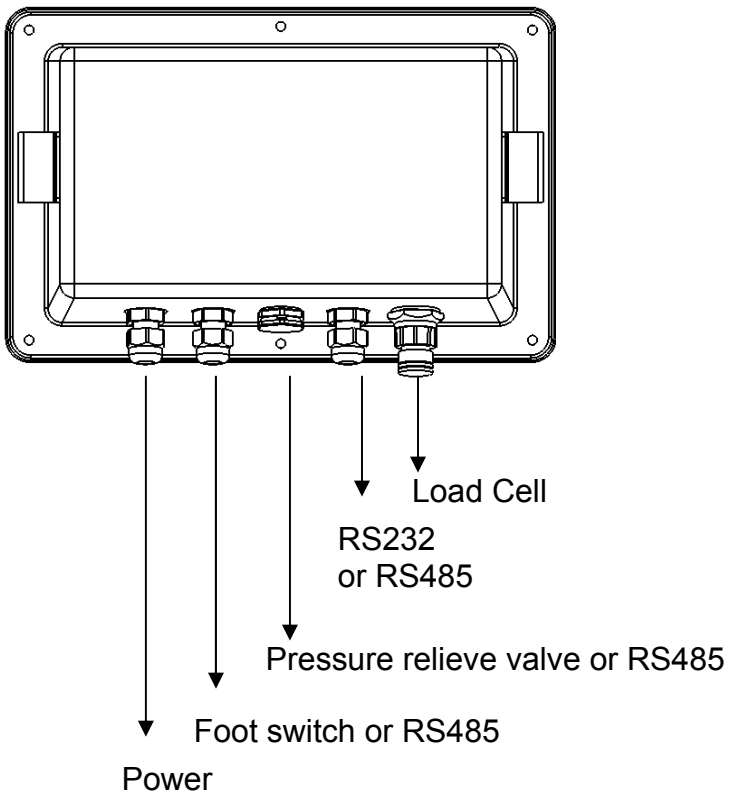
1-3 Product Appearance



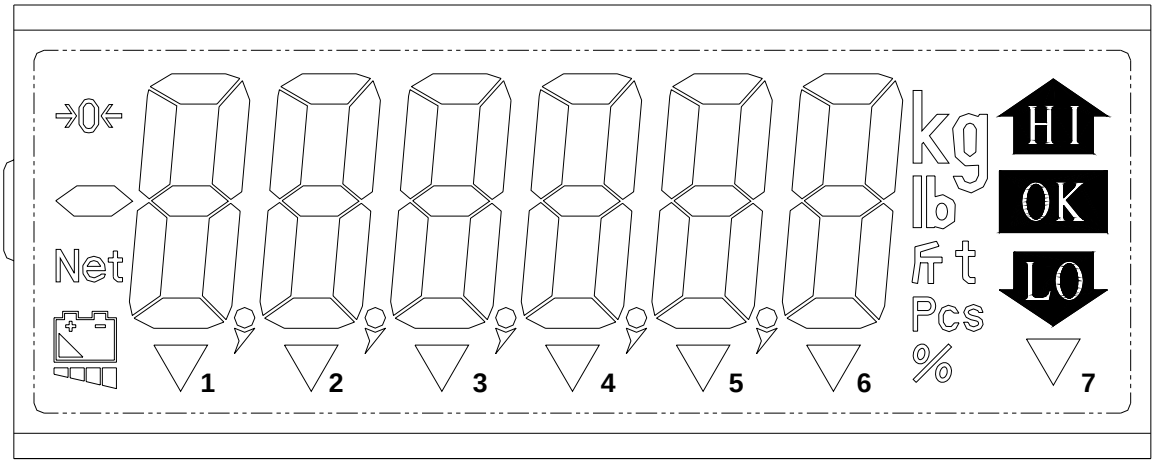
[Standard]



[Option]



1-4 Display Description



HI : Upper limit
OK : Value between HI and LO
LO : Lower limit
kg : Unit “kilogram”
lb : Unit “pound”
t : hk tael
Pcs : Counting mode indication
→0← : Zero point indication
Net : Net weight indication
: Low Power indication

“▼” indications description:
▼1 : (STABLE) stable indication
▼2 : (GROSS) gross weight indication
▼3 : (Pcs) unit weight insufficient indication
▼4 : (PT) pre-tare indication
▼5 : (Hold) weight hold indication
▼6 : “GN”、“dwt”、 “carat” 、”M+” unit indication
▼7 : “oz” or “viss” unit indication (set as needed), or no unit indication

1-5 Power Supply

Power Supply Selection

① 6V / 4.5Ah rechargeable battery
② 110/230VAC ±15% (plugged-in)

Power Consumption

Approximately DC 31 mA (Indicator + Load Cell)
Approximately DC 65 mA (Indicator + Load Cell + Display backlight)
Approximately DC 80 mA (Indicator + Load Cell + Wireless 100M)
Approximately DC 65 mA (Indicator + Load Cell + Wireless 10M)

Charging Voltage

DC 10V/1A

Low Battery Warning

Please note when the ( ) symbol keeps flashing on the display, the internal battery should be recharged.

- The scale will turn off automatically after a few hours when the low battery warning symbol shows up. The scale must be fully charged, before operating again.
- When the battery status indication is full, the power is about 6.1V; Each block is about 0.2V; When the battery warning symbol shows up, the power is about 5.4V.

Safety Reminder:

- Please make sure “+” , “- “ poles are placed in the correct direction
- Please don’t’ place the battery in hot areas, or try to dissemble the battery, to avoid electricity leakage.
- Please don’t mix & use batteries of different models.
- Please don’t keep the used-up battery in the battery case to avoid breakdown. (dry cell models)
- The battery inside the indicator was used for testing the fullness of the product. Therefore, the life of the battery cannot be count from the day you purchase.

1-6 Keypad Function

ON/OFF KEY

Press the ON/OFF key to switch the indicator on or off.

ZERO KEY

The ZERO key acts as the zero balance function. If the weighing value is within the range of zero balance, it can be re-zeroed and tare cancelled.

- Zero Range : OIML&NTEP is ±2% F.S., and Sri Lanka is ±3% F.S.

TARE/PT KEY: Tare/Pre-tare key

To TARE:

Place the container onto the scale, until the weight value is stable, press **TARE/PT** key for zero return and the NET indication is shown on the display.

Place the object onto the container and the display shows the net weight value of the object.

Remove both object and container, and negative value of the container will show on the display.

Press **TARE/PT** again to clear “tare value”. The scale returns to zero and NET indication goes off.

- Tare can be continuously done until tare value=full load capacity
- Continuous Tare → Press **TARE/PT** key for continuous weight increase/decrease on platter.
- If there is Tare, the pre-tare cannot be done. If there is pre-tare first, and the tare weight more than pre-tare weight, Tare can be done.
- No Tare can be done under gross weight display mode.

To PRE-TARE:

Press **TARE / PT** key, use keypad to input pre-tare weight. When the cursor flashes on the rightmost digit, press **TARE / PT** key again to complete.

Pre-tare mode, keypad function as followed:

ZERO => upward key(0~9 digit entry) **NET/GROSS** => move cursor leftward

UNIT => downward key(0~9 digit entry) **TARE/PT** => move cursor rightward

UNIT KEY

Press the UNIT key to switch weight units; the display icons will indicate the active units.

NET/GROSS KEY

In the Tare mode, the screen displays the “TARE” icon; press the NET/GROSS key to switch between the “Net value” and the “Gross value”.

When the ”GROSS” arrow ▼ shows up, the Gross Weight in the screen = Tare weight + Net weight, meanwhile, keys except the NET/GROSS KEY, have no response.

M+ | PRINT KEY

Totalization function. M+/Print function is available when RS232 is on keypad transmission mode. (r5 104 output).

This key is a composite key, while totalization is shown and weight returns to net zero, press M+ key to erase memory. RS232 will output MC print format (r5 103 output).

- If there is new weight added on platter（it is less than 20 divisions in Brazil version, no accumulation ）, a new item will be added to totalization. If this weight is not taken off, nothing can be added to totalization.

  Display will show the totalization numbers for one second, then show net weight for one second, then the scale returns to the current weight, and prints out the last item for totalization.

- To clear totalization data, press M+ key to let display shows up totalization numbers, then press M+ again, to clear totalization data. RS232 will print out totalization numbers, total weight, etc.

  P.s. Weight must return to net zero if to perform clear function.

F KEY

Function key (In FnC 12, select F key as “MC” or “HR”

Foot Switch Mode:

This function is optional. Use FNC11 to select TARE/PT key as “ZERO” or “PRINT” key

- If “PRINT” key is set (r5 1 03 = 10/11), all totalization data will be printed out, and totalization will be cleared.
  If it is Brazil version and foot switch is set as Print function, it has totalization function and print function.

Simple Counting Mode

Use UNIT key to switch unit to Pcs, to go into simple counting mode.

1. Use NET/GROSS key, to select a sample number from “10 , 20, 50, 100, or 200”. Display will show C 10、C 20、C 50、C 100、C 200 in an sequential order by pressing NET/GROSS key.
2. Select a sampling number, and put appropriate weight on platter, and press UNIT key. Display will show “- - - - - -”. The scale will go into counting mode after weight is stable, and display will show the sample number.

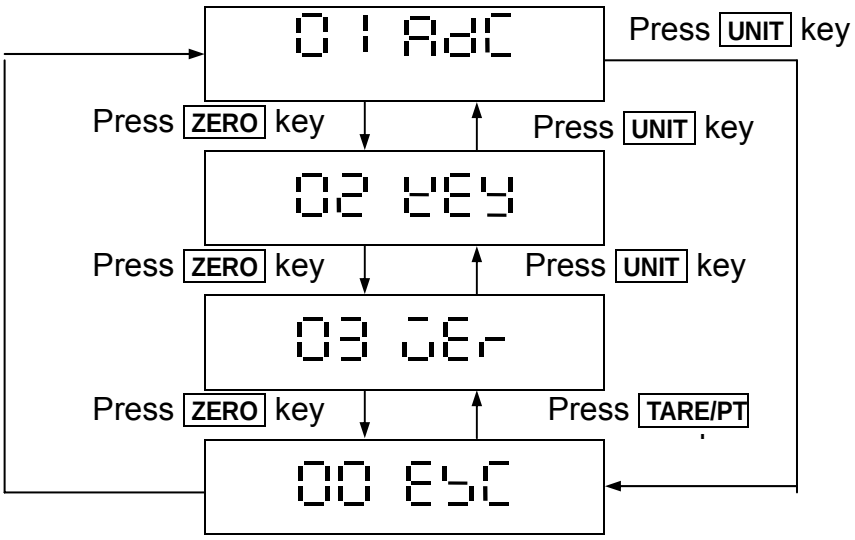
- Unit weight insufficient (Pcs): Sample unit weight is ***less*** than 0.2d (d=division) or total sample weight is ***less*** than 20d (d=division)

- While sampling, if there is insufficient sample or unit weight insufficient indication “▼”, the scale is still usable, but there may be slight inaccuracy.
- After Power-off, the scale automatically memorizes the sampling number, and it is available when “Pcs” unit is selected next time.
- If the setting is “automatic average unit weight “, if the object on platter > the previous sampling number more than 5 pcs, and also < less than 100% the previous sampling number, the scale will execute unit weight calibration automatically.

1-7 Self-Test Mode

When power is off, hold [NET/GROSS], and press [ON/OFF] key,

Wait till display shows 01 AdC to enter “Self-Test Mode”.



01 AdC INTERNAL VALUE MODE (must hook up full-bridge Load Cell to test)

① Press [TARE / PT] to enter, and the display shows internal value
② Please check the internal value is within normal range is 0 ~ 400000 (no load)
③ Check whether the backlight is on 01 AdC
④ Press [ZERO] key to back to the last screen , the display shows 01 AdC

02 tEY KEYPAD TEST MODE

① Press [TARE/ PT] to enter, display shows tEY 06
Keypad’s internal code: [TARE/ PT] key= 06 、 [UNIT] key= 05、 [NET/GROSS] key=04 [F] key = 02
② Press [ZERO] key to back to the last screen , the display shows 02 tEY

03 SEr FIRMWARE VERSION DISPLAY MODE

① Press [TARE/ PT] to enter , display shows the firmware version 02005,
② Press [TARE/ PT] key again, the display shows maintenance number 155 for 2 seconds
③ Press [ZERO] key to back to the last screen, display shows 03 SEr

00 ESC BACK TO THE LAST SCREEN

Press [TARE/ PT] key to exit self-test mode, the scale will re-power on automatically.

1-8 Error Messages

E0 ⇒ The EEPROM is not working correctly.

The EEPROM is not set yet, or the circuit on PCB is broken.

E1 ⇒ Zero is higher than the zero range when switching the indicator on.

E2 ⇒ Zero is lower than the zero range when switching the indicator on.

E4 ⇒ A/D value is unstable.

oL ⇒ The weight of the object is over 9 divisions of the maximum capacity.

-oL ⇒ The weight of the object is under -1/6 maximum capacity.

oF ⇒ ADIC value is over the maximum range.

E10 ⇒ The scale is not in level status.

(Only available with level detector equipped)

1-9 Weight Units

(kg)	1 g = 0.001 kg
(g)	1 g = 1 g
(lb)	1 g = 0.002204623 lb
(lb/oz)	1 g = 0.03527396 oz
(oz)	1 g = 0.03527396 oz
(GN)	1 g = 15.432358 GN
(dwt)	1 g = 0.6430149 dwt
(ct)	1 g = 5 ct
(hk.tael)	1 g = 0.02645546 Hk.catty
viss	1kg = 0.612245 viss

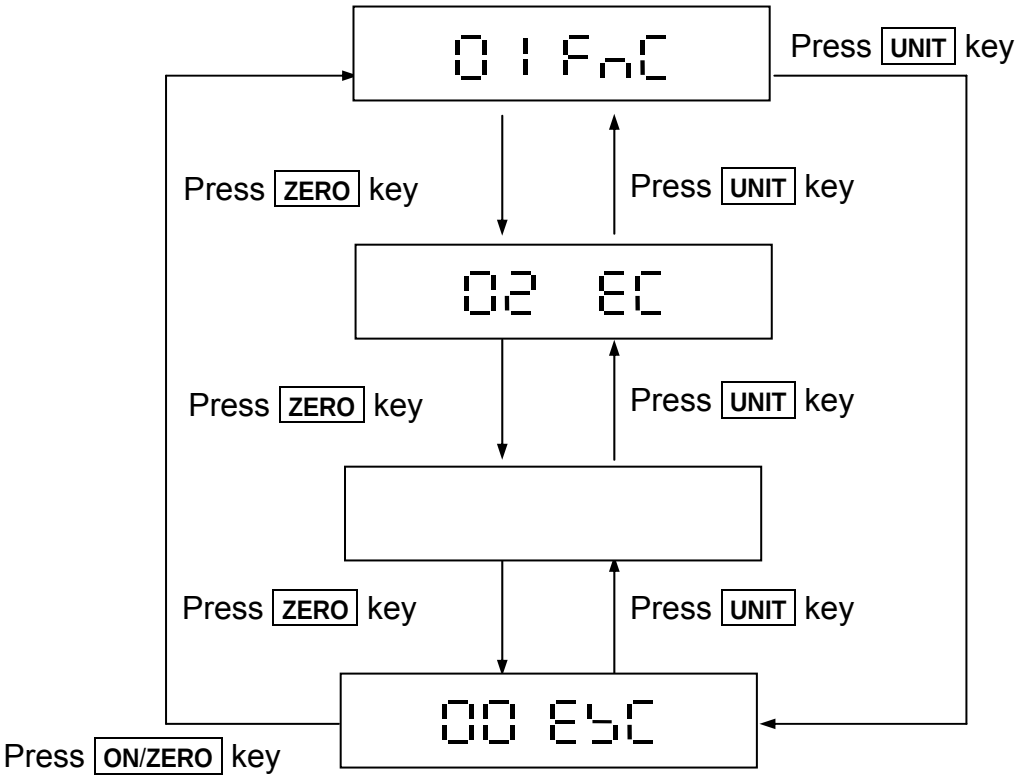
CHAPTER 2 Configurations

Configuration Workflow

In the weighing mode, press the **NET/GROSS** and **ZERO** keys at the same time to enter the configuration mode.

The LCD shows 01 FnC.

Overall workflow of the Advanced Function setting mode:

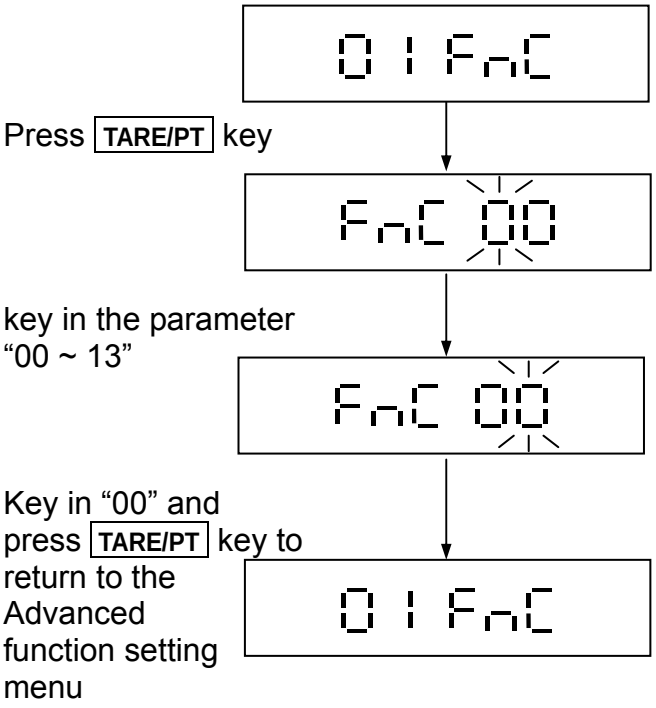


01 FnC	⇒ General Function Setting Mode
02 EC	⇒ External Weight Calibration
03 rS1	⇒ RS232 Bi-direction Function Setting
00 EsC	⇒ Exit the Advanced Function Setting Mode

Refer to the following sections for the detailed operation procedures of each function setting.

2-1 General Function Setting 01 FnC

Workflow of the General Function setting:

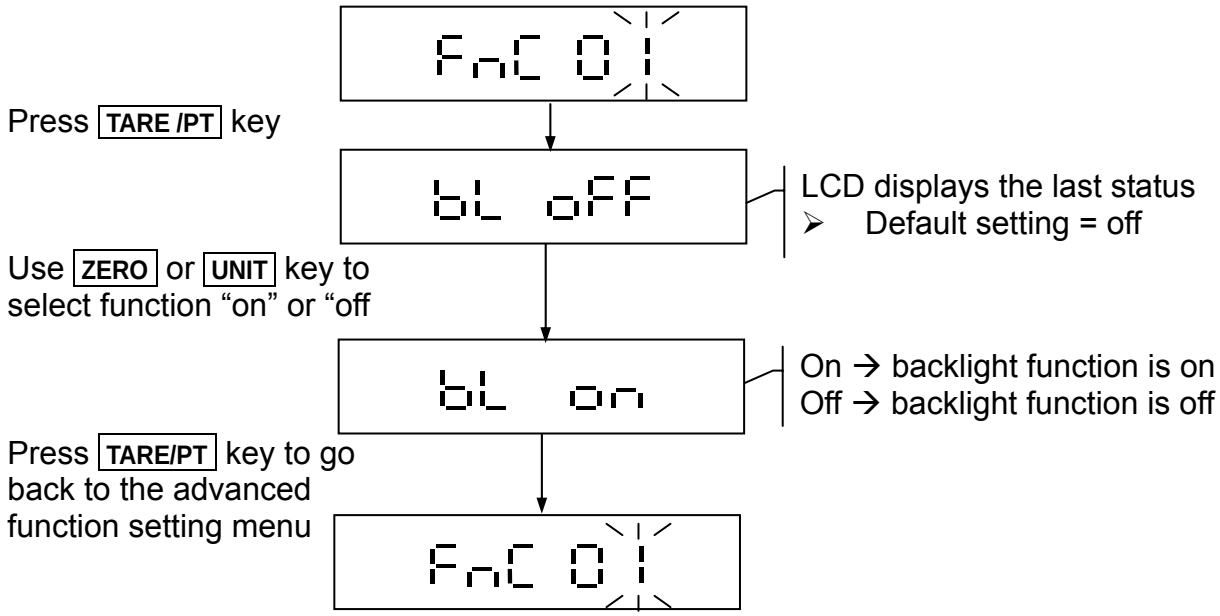

01 FnC
Press TARE/PT key
FnC 00
key in the parameter "00 ~ 13"
FnC 00
Key in "00" and press TARE/PT key to return to the Advanced function setting menu
01 FnC

ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

FnC 00 ⇒ Return to the Advanced Function Setting Mode Menu
FnC 01 ⇒ Automatic Backlight Function Settings
FnC 02 ⇒ Automatic Power-off Timer Settings
FnC 03 ⇒ Hi/Lo/OK Settings
FnC 04 ⇒ Restore the Default Settings
FnC 05 ⇒ Noise Filter Settings
FnC 06 ⇒ Hold Function Settings
FnC 07 ⇒ Auto Unit Weight Averaging Setting
FnC 08 ⇒ Reserved
FnC 09 ⇒ Reserved
FnC 10 ⇒ Record Last Zero
FnC 11 ⇒ Foot switch on/off settings (Option)
FnC 12 ⇒ F key function settings
FnC 13 ⇒ Zero Setting

2-1-1 Auto Backlight Function Setting FnC 01

Select FnC 01 in the general function setting mode 01 FnC to change the backlight function setting.


FnC 01
Press TARE /PT key
bL oFF
LCD displays the last status
➢ Default setting = off
Use ZERO or UNIT key to select function “on” or “off
bL on
On → backlight function is on
Off → backlight function is off
Press TARE/PT key to go back to the advanced function setting menu
FnC 01

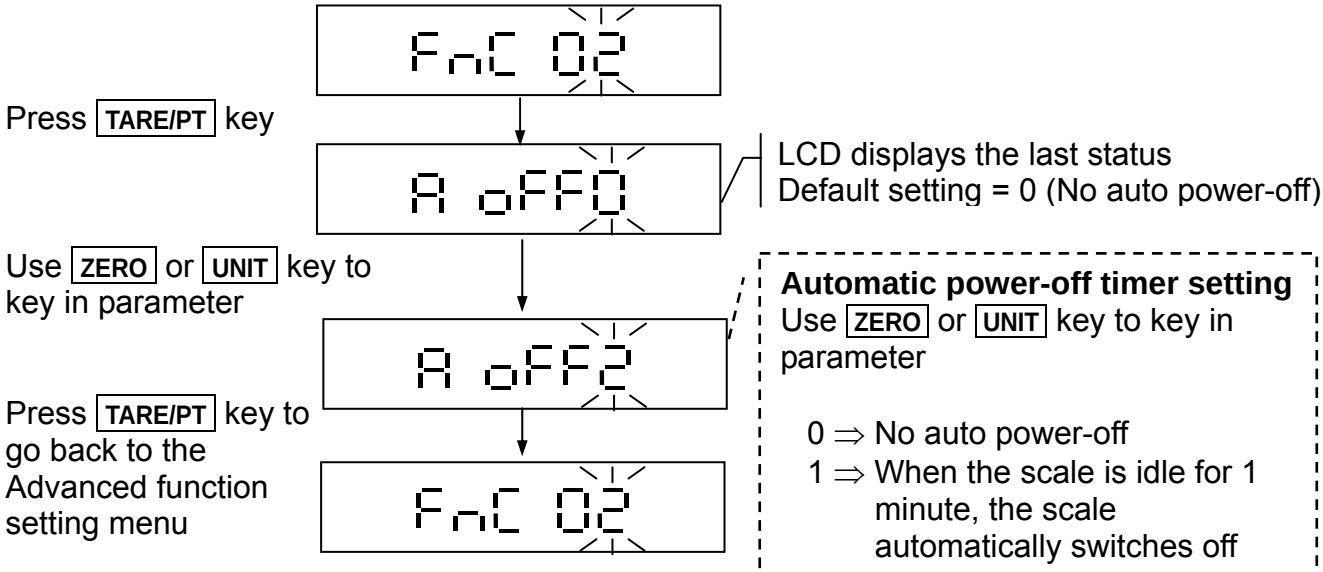
ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

Auto backlight function

When the weight is over 10d, the display backlight will be on. After the weight is stable for 10 seconds or when the scale returns to zero, the display backlight switches off.

2-1-2 Auto Power-off Timer Setting FnC 02

Select FnC 02 in the general function setting mode 01 FnC to change the automatic power-off timer setting.


FnC 02
Press TARE/PT key
A oFF0
LCD displays the last status
Default setting = 0 (No auto power-off)
Use ZERO or UNIT key to key in parameter
A oFF2
Press TARE/PT key to go back to the Advanced function setting menu
FnC 02
Automatic power-off timer setting
Use ZERO or UNIT key to key in parameter
0 ⇒ No auto power-off
1 ⇒ When the scale is idle for 1 minute, the scale automatically switches off
2 ⇒ When the scale is idle for 2 minutes, the scale automatically switches off
9 ⇒ When the scale is idle for 9 minutes, the scale automatically switches off

ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

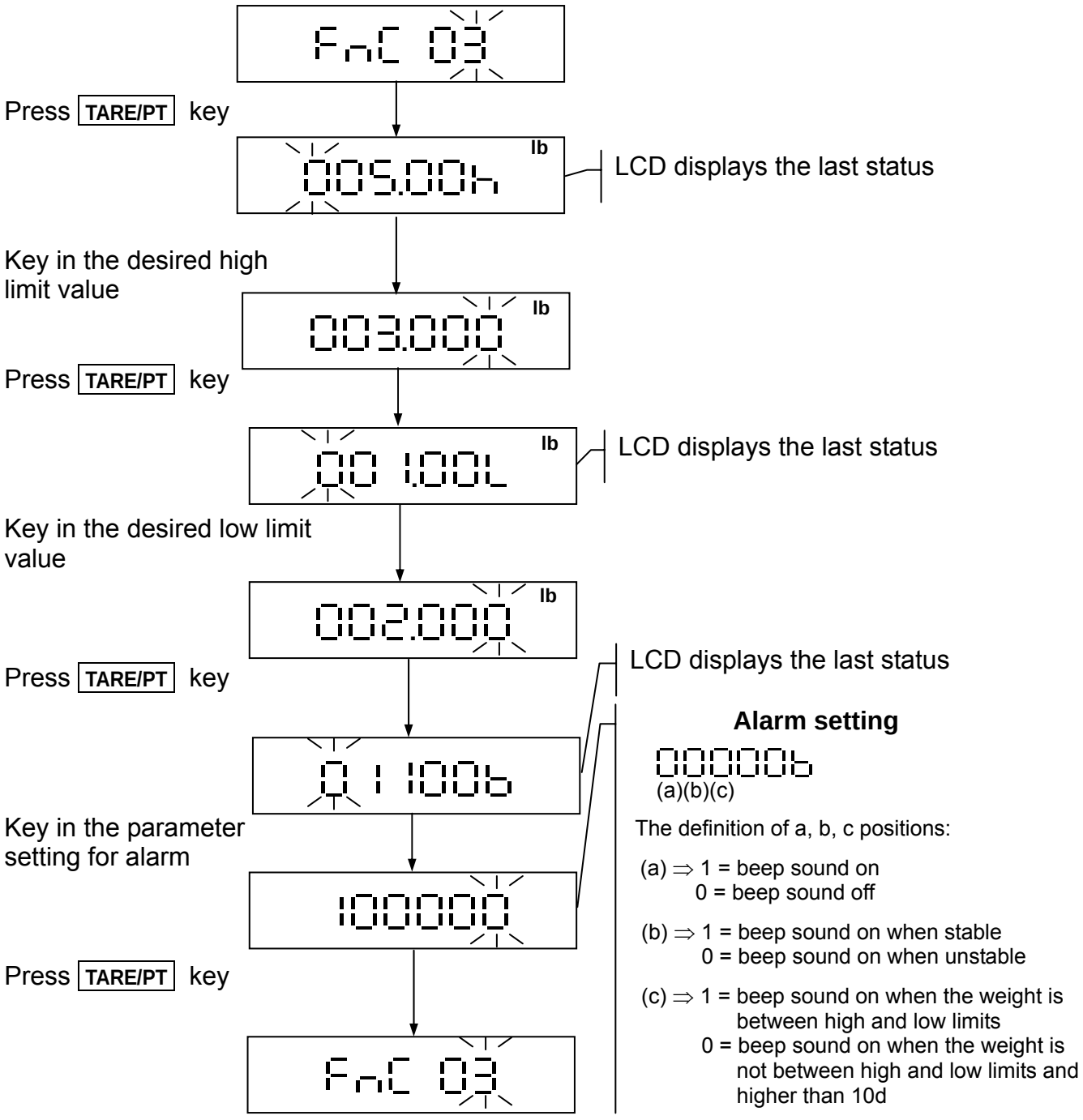
Auto power-off function

When the weight on weigh pan is less than 10d or keeps idle for the set time, the scale will automatically switch off.

2-1-3 HI/LO/OK Settings FnC 03

Select FnC 03 in the general function setting mode 01 FnC to set the HI/LO/OK function.

When the high limit and low limit are both set as "0", the Hi/Lo/OK function is disabled.


FnC 03
Press TARE/PT key
lb
005.000
LCD displays the last status
Key in the desired high limit value
lb
003.000
Press TARE/PT key
lb
001.000
LCD displays the last status
Key in the desired low limit value
lb
002.000
Press TARE/PT key
LCD displays the last status
Alarm setting
000000
(a)(b)(c)
Key in the parameter setting for alarm
110000
Press TARE/PT key
FnC 03
The definition of a, b, c positions:
(a) ⇒ 1 = beep sound on
0 = beep sound off
(b) ⇒ 1 = beep sound on when stable
0 = beep sound on when unstable
(c) ⇒ 1 = beep sound on when the weight is between high and low limits
0 = beep sound on when the weight is not between high and low limits and higher than 10d

ZERO key ⇒ Upward key (0~9 digit entry)

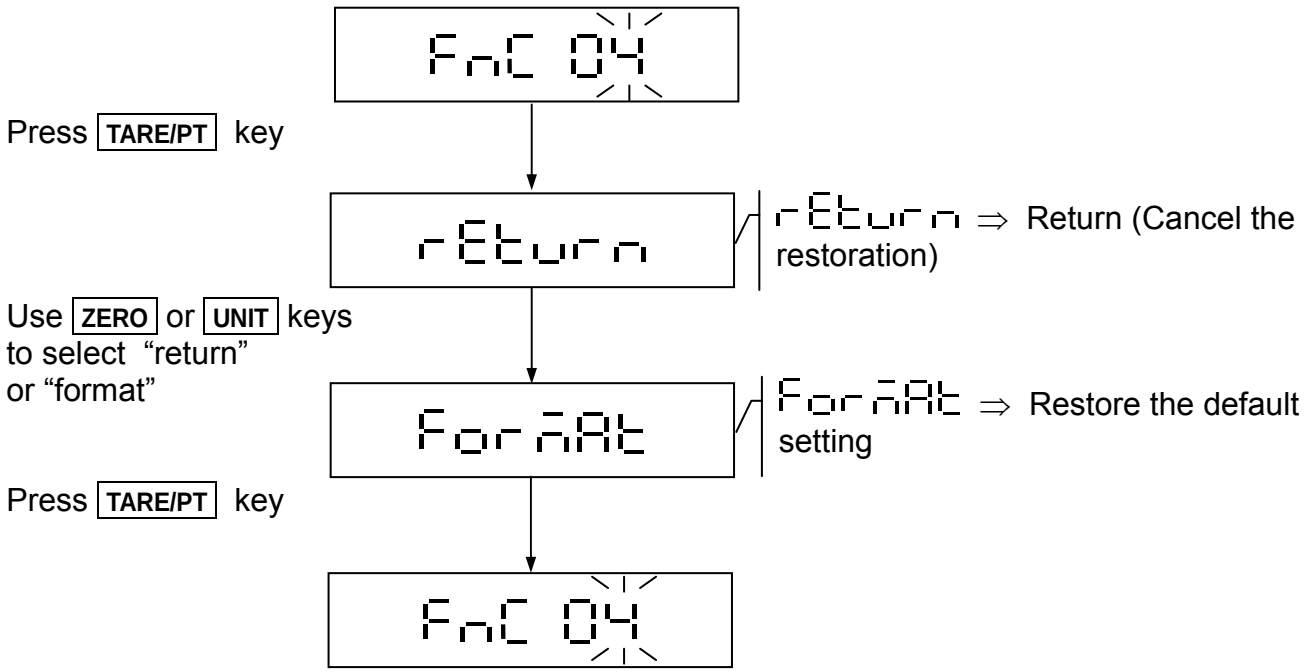
UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-1-4 Restore to the Default Settings FnC 04

Select FnC 04 in the general function setting mode 0 1 FnC to restore to the default settings.



ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

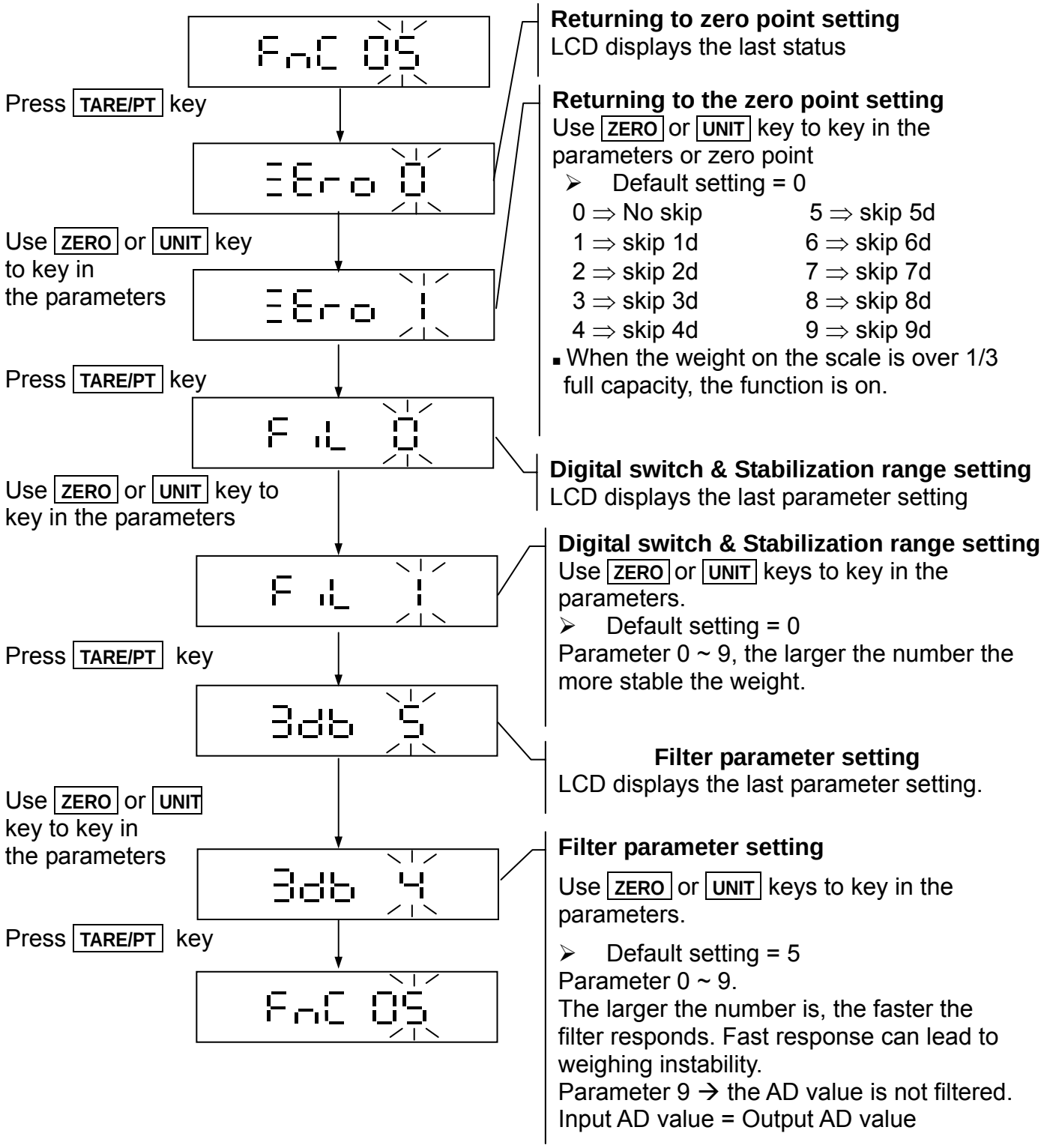
The defaults are included the following:

1) External weight calibration
2) HI/LO/OK setting values
3) Noise filter setting (External)
4) Sampling settings for the counting function

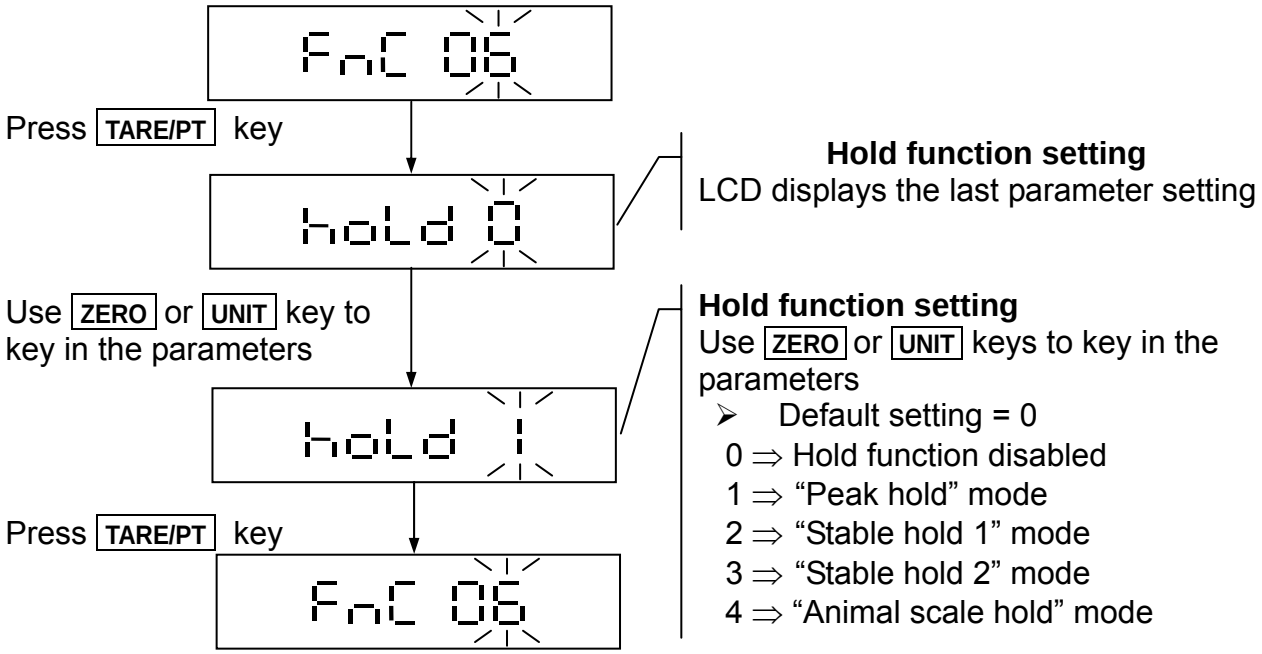
2-1-5 Noise Filter Settings FnC 05

Select FnC 05 in the general function setting mode 01 FnC to set the noise filter settings.

When modifying FnC 05, the parameters of CFn 01 remain un-altered.


FnC 05
Press TARE/PT key
ZEro 0
Use ZERO or UNIT key to key in the parameters
ZEro 1
Press TARE/PT key
F iL 0
Use ZERO or UNIT key to key in the parameters
F iL 1
Press TARE/PT key
3db 5
Use ZERO or UNIT key to key in the parameters
3db 4
Press TARE/PT key
FnC 05
Returning to zero point setting
LCD displays the last status
Returning to the zero point setting
Use ZERO or UNIT key to key in the parameters or zero point
➢ Default setting = 0
0 ⇒ No skip
1 ⇒ skip 1d
2 ⇒ skip 2d
3 ⇒ skip 3d
4 ⇒ skip 4d
5 ⇒ skip 5d
6 ⇒ skip 6d
7 ⇒ skip 7d
8 ⇒ skip 8d
9 ⇒ skip 9d
▪ When the weight on the scale is over 1/3 full capacity, the function is on.
Digital switch & Stabilization range setting
LCD displays the last parameter setting
Digital switch & Stabilization range setting
Use ZERO or UNIT keys to key in the parameters.
➢ Default setting = 0
Parameter 0 ~ 9, the larger the number the more stable the weight.
Filter parameter setting
LCD displays the last parameter setting.
Filter parameter setting
Use ZERO or UNIT keys to key in the parameters.
➢ Default setting = 5
Parameter 0 ~ 9.
The larger the number is, the faster the filter responds. Fast response can lead to weighing instability.
Parameter 9 → the AD value is not filtered.
Input AD value = Output AD value

2-1-6 Hold Function Settings FnC 06


FnC 06
Press TARE/PT key
hold 0
Hold function setting
LCD displays the last parameter setting
Use ZERO or UNIT key to key in the parameters
hold 1
Hold function setting
Use ZERO or UNIT keys to key in the parameters
➢ Default setting = 0
0 ⇒ Hold function disabled
1 ⇒ "Peak hold" mode
2 ⇒ "Stable hold 1" mode
3 ⇒ "Stable hold 2" mode
4 ⇒ "Animal scale hold" mode
Press TARE/PT key
FnC 06
ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

hold 0 = Hold function disabled

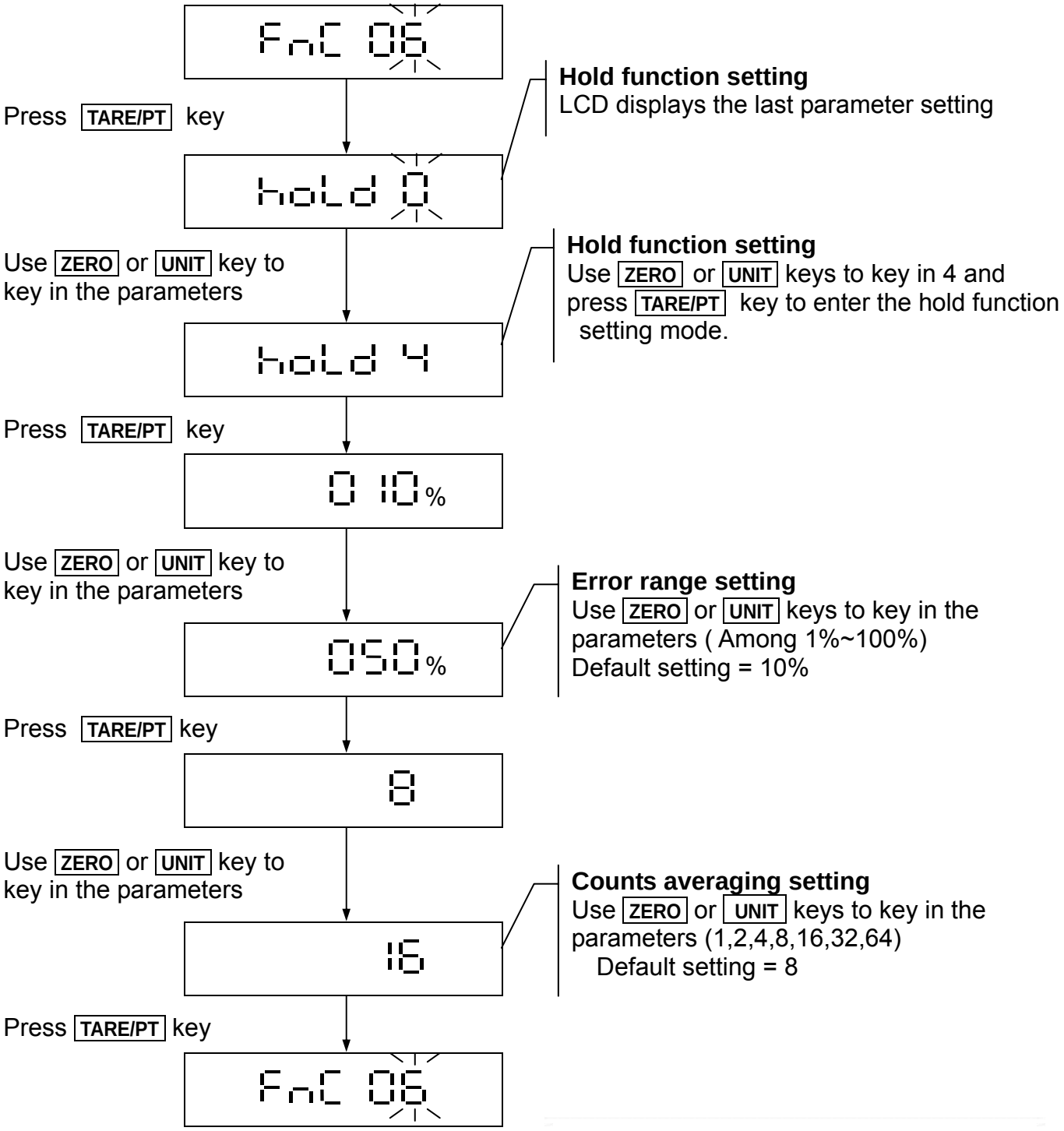
hold 1 = "Peak hold" mode
The scale keeps displaying the maximum weight when the weight is continually changing. Press any key to exit this mode.

hold 2 = "Stable hold 1" mode
When the weight is stable, the LCD shows the current weight value. Press any key to exit this mode.

hold 3 = "Stable hold 2" mode
When the weight is stable, the LCD shows the current weight value. When the weight returns to zero (<10d), the hold mode is cancelled automatically.

hold 4 = "Animal scale hold" mode
When the scale returns back to zero, the display shows " - - - - - - ". After the animal or object is on the platter and the scale becomes stable, the display shows the weight value and hold. Then when the animal or object is off the platter, the display shows " - - - - - - " (or the weight is less than 10e) and the hold function is off. If the scale is hardly stable when the animal is on the platter, the scale shows the average weight in 10 seconds and holds the status.

Hold Function Setting (Animal scale) hold 4


FnC 06
Press TARE/PT key
Hold function setting
LCD displays the last parameter setting
hold 0
Use ZERO or UNIT key to key in the parameters
Hold function setting
Use ZERO or UNIT keys to key in 4 and press TARE/PT key to enter the hold function setting mode.
hold 4
Press TARE/PT key
0 10%
Use ZERO or UNIT key to key in the parameters
Error range setting
Use ZERO or UNIT keys to key in the parameters (Among 1%~100%)
Default setting = 10%
050%
Press TARE/PT key
8
Use ZERO or UNIT key to key in the parameters
Counts averaging setting
Use ZERO or UNIT keys to key in the parameters (1,2,4,8,16,32,64)
Default setting = 8
16
Press TARE/PT key
FnC 06

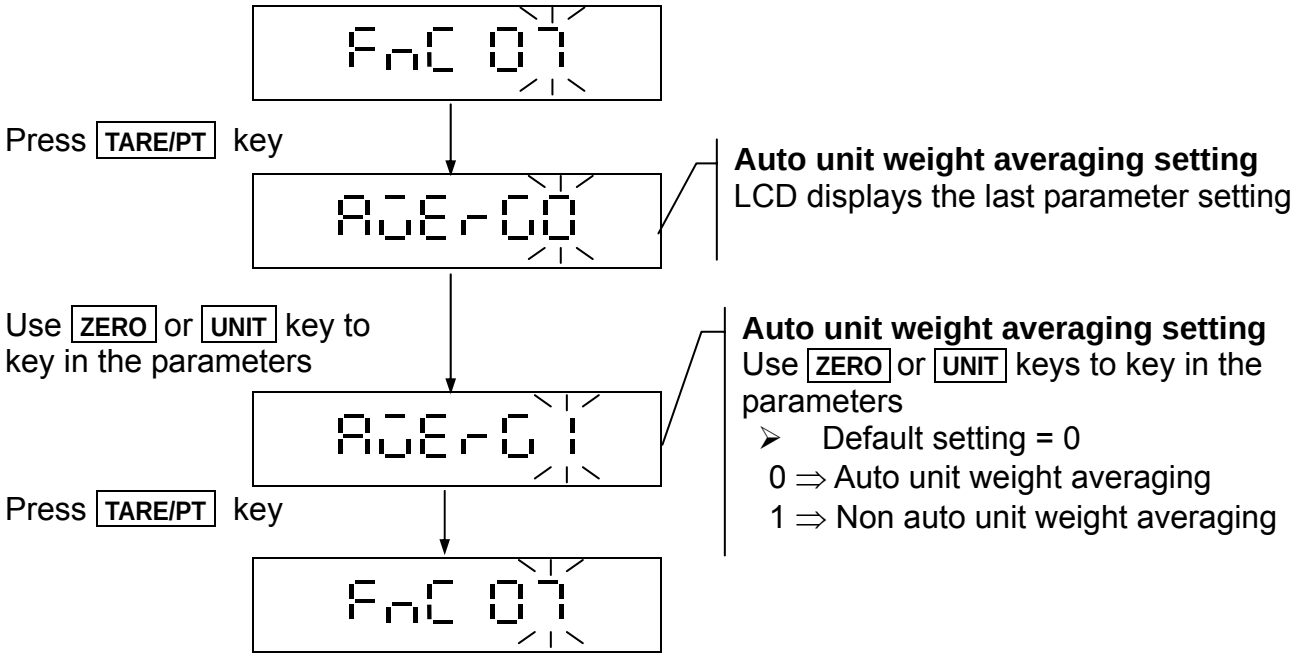
ZERO key ⇒ Upward key (0~9 digit entry)

UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-1-7 Auto Unit Weight Averaging Setting FnC 07


FnC 07
Press TARE/PT key
AUEr 00
Auto unit weight averaging setting
LCD displays the last parameter setting
Use ZERO or UNIT key to key in the parameters
AUEr 01
Auto unit weight averaging setting
Use ZERO or UNIT keys to key in the parameters
➢ Default setting = 0
0 ⇒ Auto unit weight averaging
1 ⇒ Non auto unit weight averaging
Press TARE/PT key
FnC 07

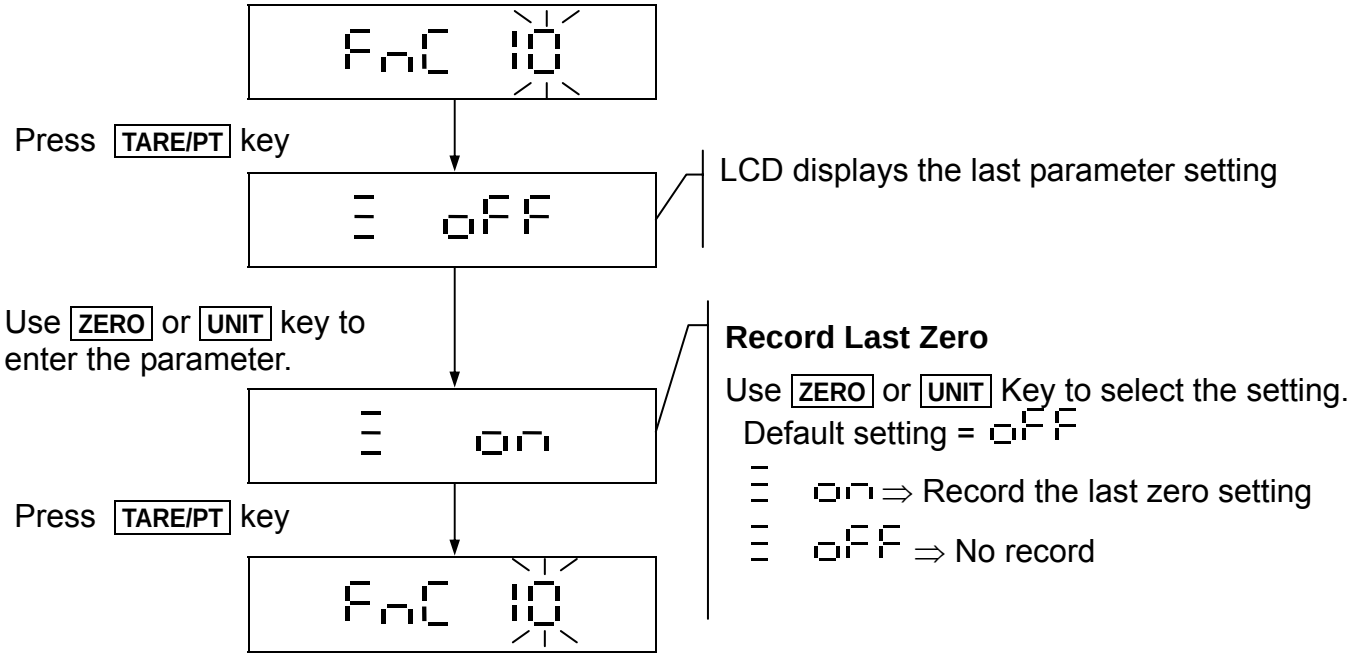
ZERO key ⇒ Upward key (0~9 digit entry)

UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-1-8 Record Last Zero FnC 10


FnC 10
Press TARE/PT key
LCD displays the last parameter setting
oFF
Use ZERO or UNIT key to enter the parameter.
Record Last Zero
Use ZERO or UNIT Key to select the setting.
Default setting = oFF
on ⇒ Record the last zero setting
oFF ⇒ No record
on
Press TARE/PT key
FnC 10

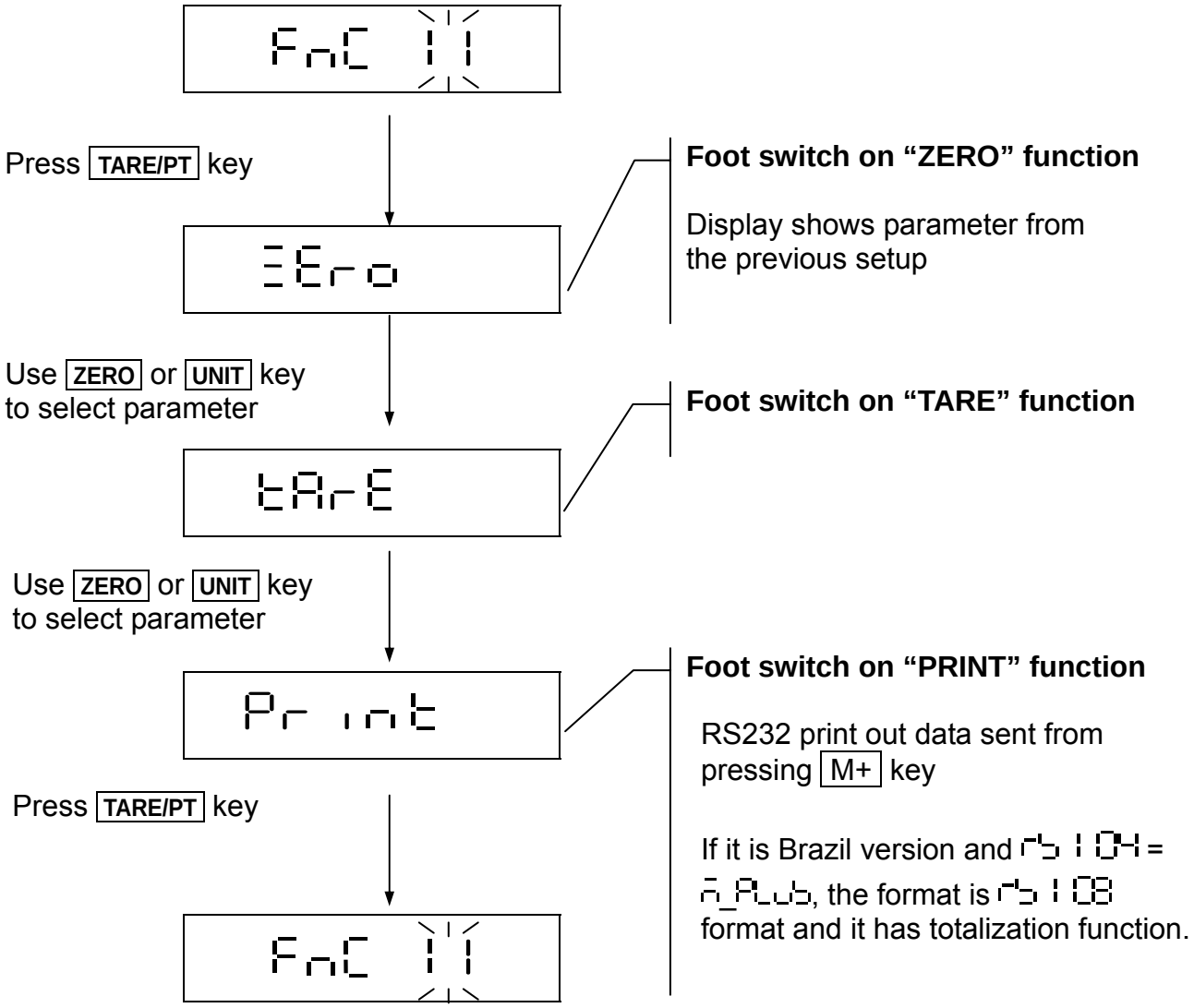
ZERO key ⇒ Upward key (0~9 digit entry)

UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-1-9 Foot Switch Settings FnC 11 (Option)


FnC 11
Press TARE/PT key
ZEro
Foot switch on "ZERO" function
Display shows parameter from the previous setup
Use ZERO or UNIT key to select parameter
tArE
Foot switch on "TARE" function
Use ZERO or UNIT key to select parameter
Print
Foot switch on "PRINT" function
RS232 print out data sent from pressing M+ key
If it is Brazil version and rS 10H = A_Plus, the format is rS 108 format and it has totalization function.
Press TARE/PT key
FnC 11

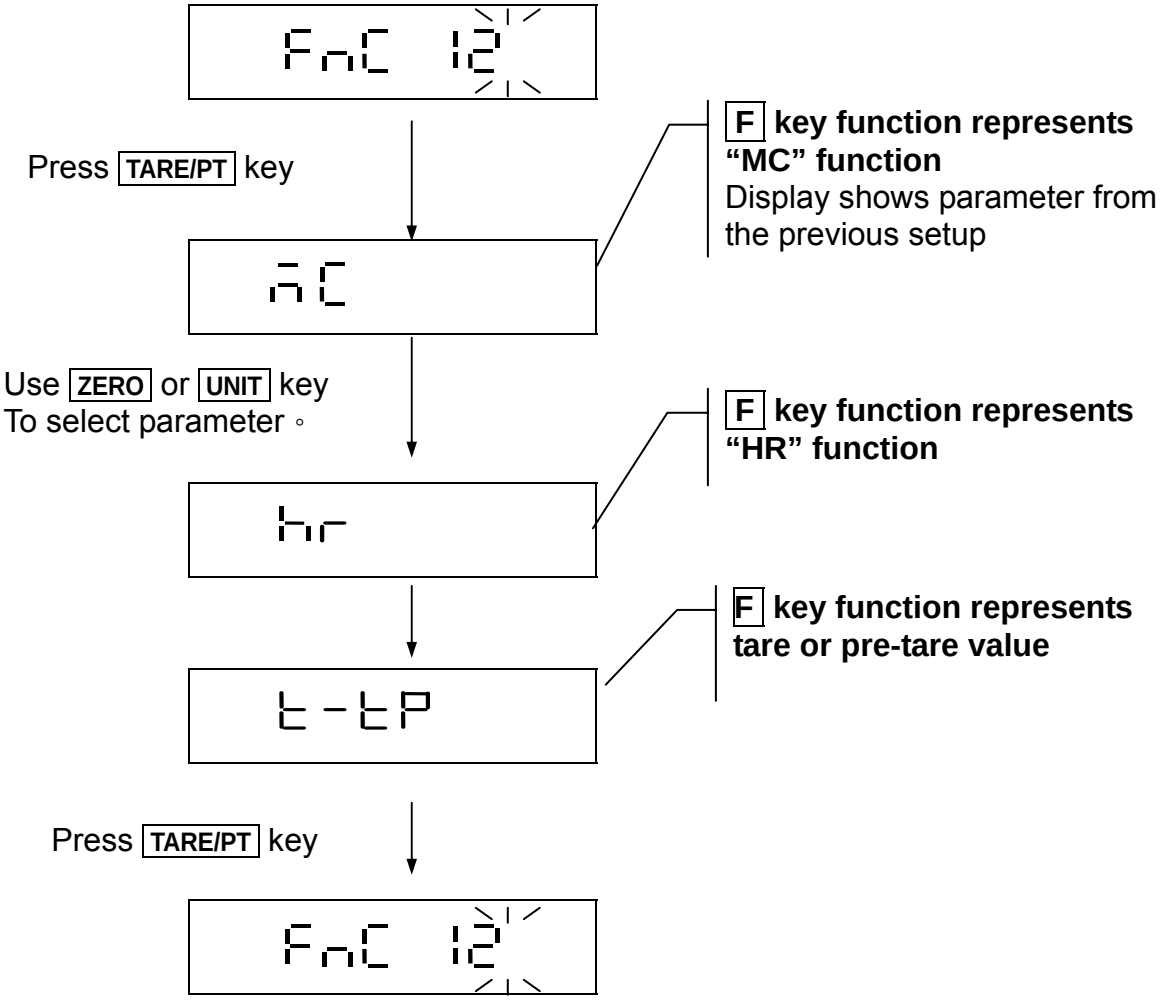
ZERO key ⇒ Upward key (0~9 digit entry)

UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-1-10 F Key Function Settings FnC 12



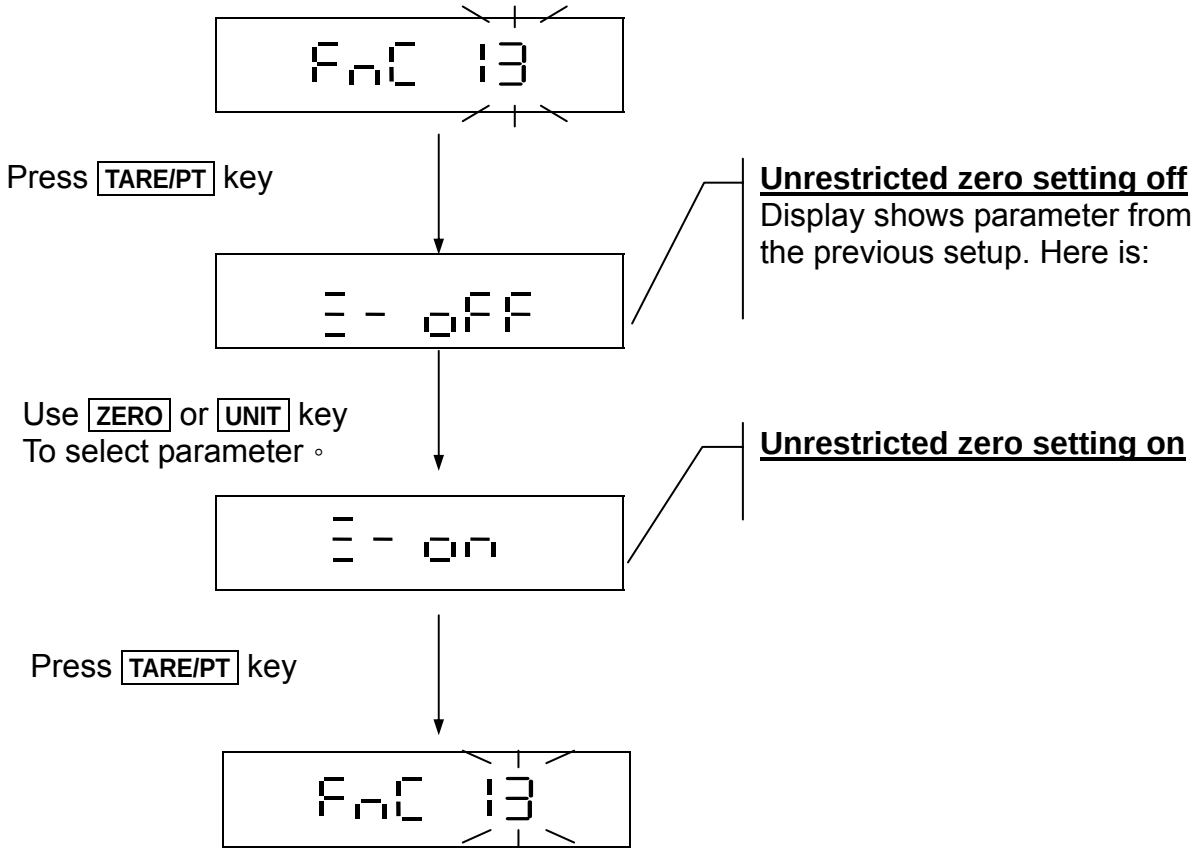
ZERO key ⇒ Upward key (0~9 digit entry)

UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-1-11 Zero Setting FnC 13



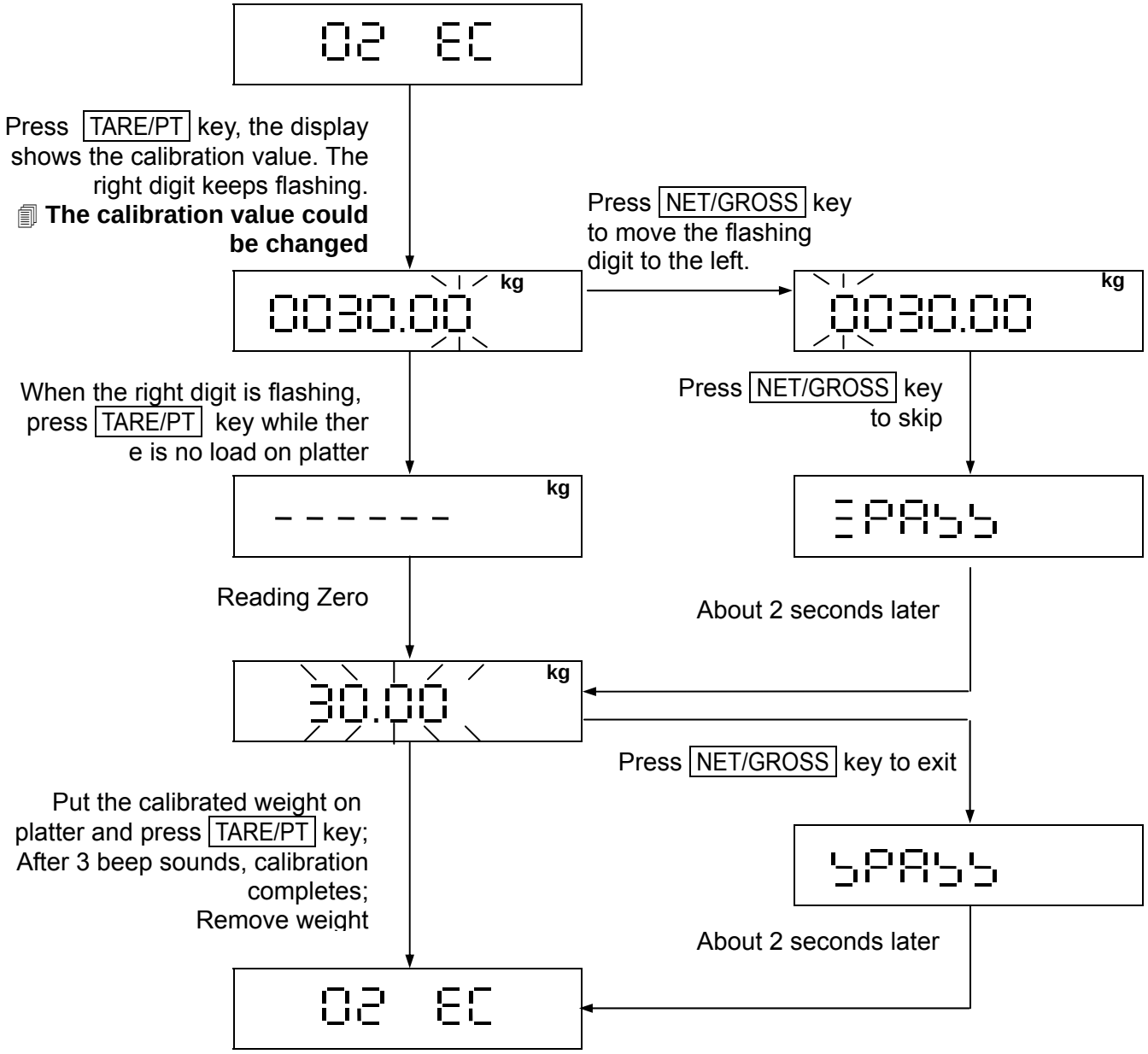
ZERO key ⇒ Upward key (0~9 digit entry)

UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-2 External Weight Calibration 02 EC


02 EC
Press TARE/PT key, the display shows the calibration value. The right digit keeps flashing.
The calibration value could be changed
Press NET/GROSS key to move the flashing digit to the left.
0030.00 kg
0030.00 kg
When the right digit is flashing, press TARE/PT key while ther e is no load on platter
Press NET/GROSS key to skip
kg
EPASS
Reading Zero
About 2 seconds later
30.00 kg
Press NET/GROSS key to exit
Put the calibrated weight on platter and press TARE/PT key; After 3 beep sounds, calibration completes; Remove weight
SPASS
About 2 seconds later
02 EC

ZERO key ⇒ Upward key (0~9 digit entry)

UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

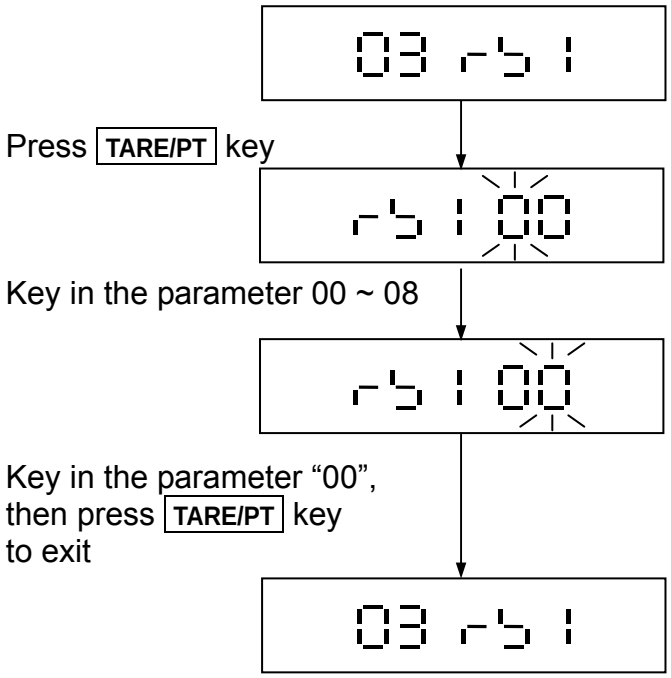
NET/GROSS key ⇒ Move cursor leftward

The conditions for external weight calibration:

The calibration weight value placed on the platter must be over 100e, and the standard deviation of the weight must be within 10%.

2-3 RS232 Serial Interface Settings 03 rS1

- For command format, please refer to page 51
- Output format, please refer to page 54

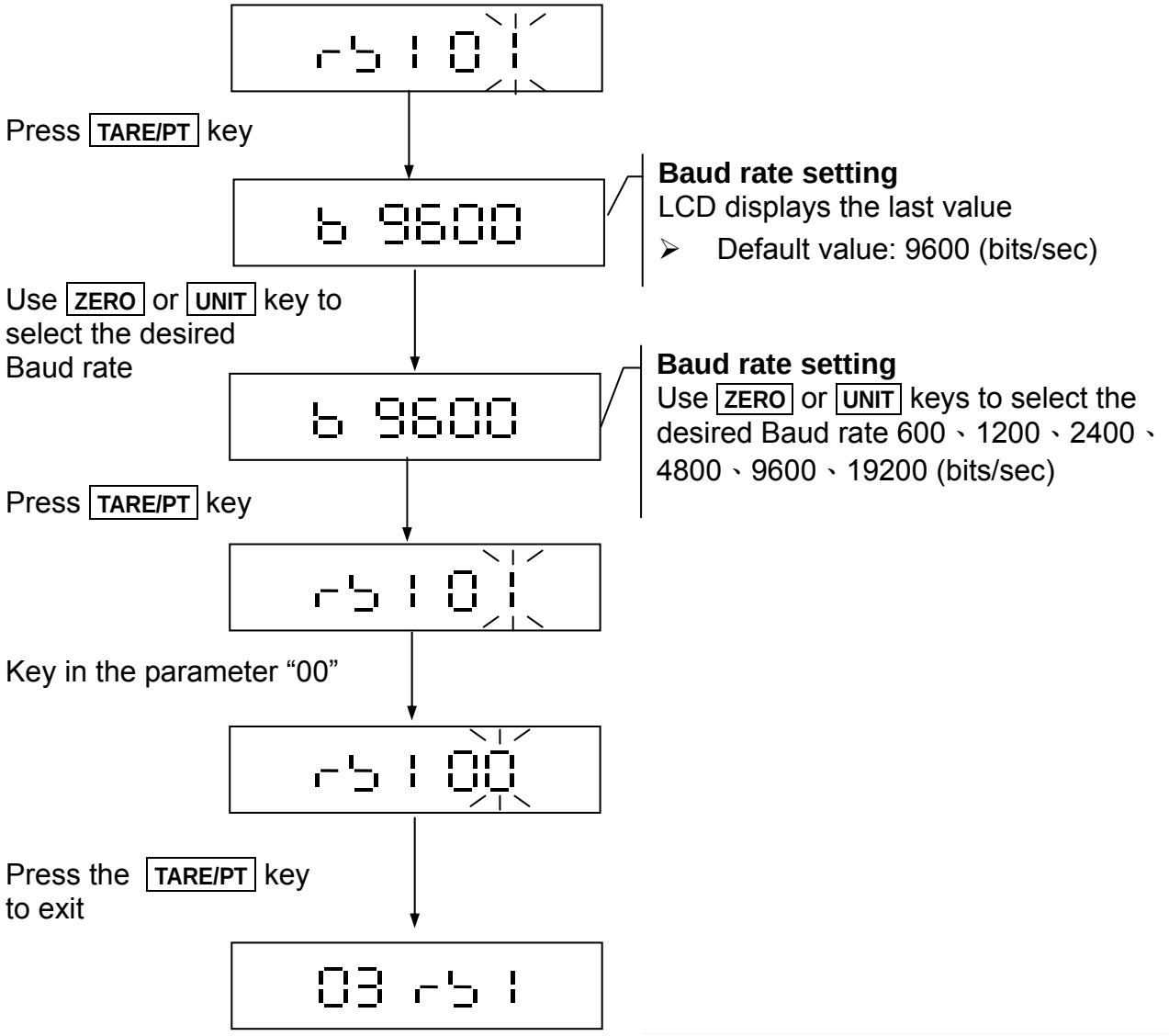


ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

rS1 00 ⇒ Exit the RS232 Serial Interface Setting Mode
rS1 01 ⇒ Baud Rate Settings
rS1 02 ⇒ Communication Protocol Settings
rS1 03 ⇒ Output Format Settings
rS1 04 ⇒ Transmission method setup
rS1 05 ⇒ The Selection of Continuous Transmission Rate
rS1 06 ⇒ Auto Transmission at Zero
rS1 07 ⇒ Reset of Auto Transmission
rS1 08 ⇒ Output Condition Settings
rS1 09 ⇒ RS232 6/7 digits setting
rS1 10 ⇒ RTC adjustment
rS1 11 ⇒ Y/M/D Print Format Selection
rS1 12 ⇒ RS485 ID Input (Option)
rS1 13 ⇒ Line Feed Input

2-3-1 Baud Rate Settings r5 101

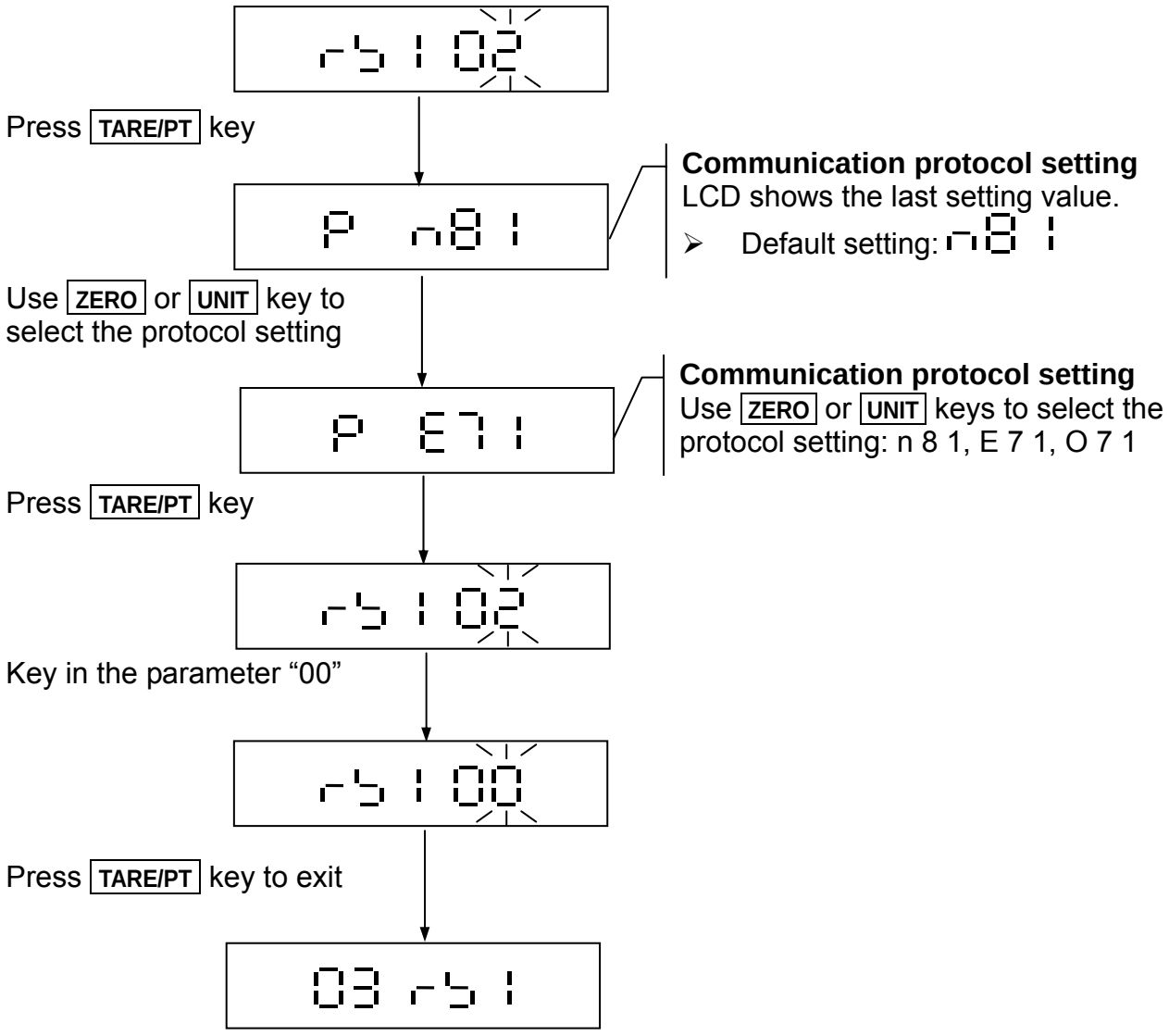
Select r5 101 in the RS232 serial interface setting mode 03 r5 1 to set the Baud Rate.


r5 101
Press TARE/PT key
b 9600
Baud rate setting
LCD displays the last value
➢ Default value: 9600 (bits/sec)
Use ZERO or UNIT key to select the desired Baud rate
b 9600
Baud rate setting
Use ZERO or UNIT keys to select the desired Baud rate 600、1200、2400、4800、9600、19200 (bits/sec)
Press TARE/PT key
r5 101
Key in the parameter “00”
r5 100
Press the TARE/PT key to exit
03 r5 1

ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

2-3-2 Communication Protocol Settings r5 1 02

Select r5 1 02 in the RS232 serial interface setting mode 03 r5 1 to set the Communication Protocol.


r5 1 02
Press TARE/PT key
P n81
Communication protocol setting
LCD shows the last setting value.
➢ Default setting: n81
Use ZERO or UNIT key to select the protocol setting
P E71
Communication protocol setting
Use ZERO or UNIT keys to select the protocol setting: n 8 1, E 7 1, O 7 1
Press TARE/PT key
r5 1 02
Key in the parameter “00”
r5 1 00
Press TARE/PT key to exit
03 r5 1

ZERO key ⇒ Upward key (0~9 digit entry)

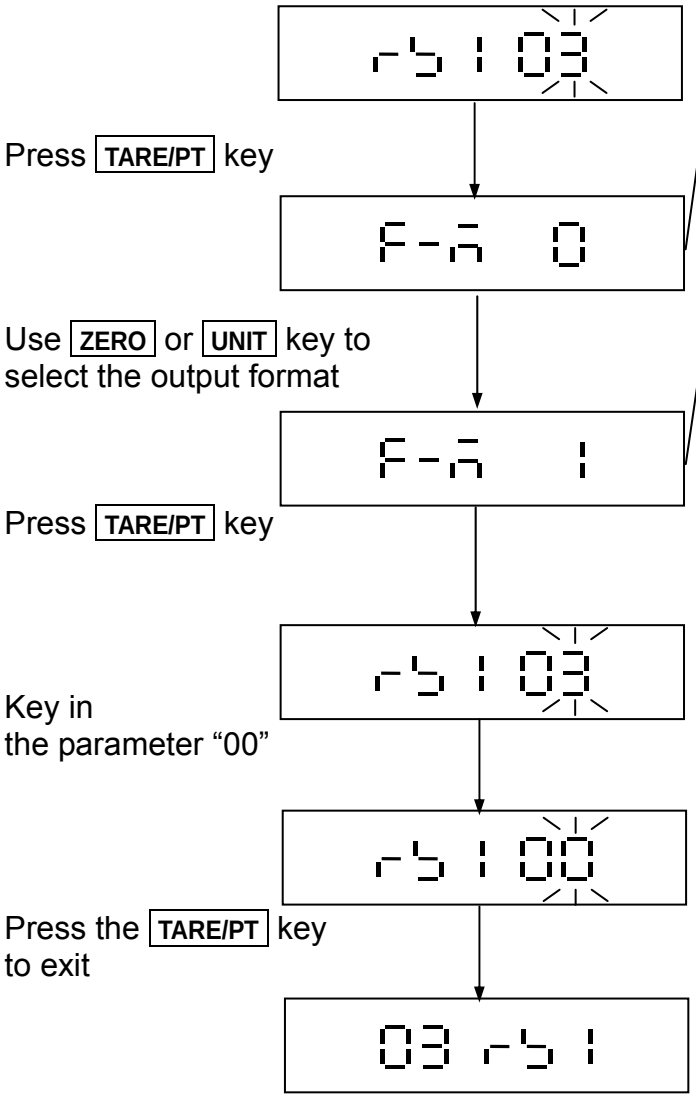
UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-3-3 Output Format Settings r5 1 03

Select r5 1 03 in the RS232 serial interface setting mode 03 r5 1 to set the Output Format.



RS232 output format setting
LCD shows the last setting.
- Default setting: F-n 0

RS232 output format setting
Use ZERO or UNIT keys to select the output format:

- F-n 0 = Same data as the scale
- F-n 1 = Gross weight
- F-n 2 = Net weight
- F-n 3 = Same data as the scale in simple format
- F-n 4 = Same gross data as the scale in simple format
- F-n 5 = Same net data as the scale in simple format
- F-n 6 = Hi/Lo/OK status + Same data as the scale in simple format
- F-n 7 = Hi/Lo/OK status + Simple gross weight
- F-n 8 = Hi/Lo/OK status + Simple net weight
- F-n 9 = Tare value
- F-n 10 = M+ Transmission 1 **note1**
- F-n 11 = M+ Transmission 2 **note2**
- F-n 12 = Brazil printing format **note 3**

Format 12. are only for Brazil
Format 10.11 are not available on counting mode

ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

Note1:
Ticket No.
Date year/month/day & day/month/year (choose 1 out of 2 date formats)
Time
G
T
N
Total Net (This line will only print when data is erased, showing net weight total of every count)

Note2:
Ticket No.
Date year/month/day & day/month/year (choose 1 out of 2 date formats)
Time
G
T
N
Total weight (This line will only print when data is erased, showing gross weight total of every count)

Note3:
If it is not Brazil version, it can only print under continuous transmition.
If it is Brazil version, under decimal units mode, FnC 11 = Pr int and rS 104 = A_PLUS, it can print out. It is not available on counting mode.
For example:
70.15Kg print as: =51.07000=51.07000=51.07000=51.07000=51.07000
negative 70.15Kg print as: =51.0700-=51.0700-=51.0700-=51.0700-=51.0700-

Note4:
If it is not Brazil version, it can print under key transmition, auto transmition and order mode.
If it is Brazil version, when the scale is stable and under under decimal units mode, FnC 11 = Pr int and rS 104 = A_PLUS, it can print out.. It is not available on counting mode.

Transformat as followed:

F	R	“	I	R	W	T	3	0	0	0	“	<LF>
?	<LF>											

G	G	G	,	G	G	**G**	<LF>
T	T	T	,	T	T	**T**	<LF>
N	N	N	,	N	N	**N**	<LF>
A	A	A	,	A	A	**A**	<LF>
C	C	C	C	C	C	<LF>	
D	D	/	M	M	/	Y	Y	<LF>
H	H	:	m	m	:	S	S	<LF>

n	n	n	,	n	n	**n**	t	t	t	,	t	t	**t**	a	a	a	,	a	a	**a**	c	c	c	c	c	c	<LF>
P	1	,	1	<LF>																				

G = gross weight
T,t = tare
N,n = net weight
A,a = accumulating weight
C,c =accumulating times
D = date (DD/MM/YY) DD: day MM: month YY: year
H = time(HH:mm:SS) HH: hour mm: minute SS: second

For example:
tare 0.2kg, net weight 1key, press M+:
FR"IRWT3000"
?
1,200
0,200
1,000
1,000
1
30/05/00
00:54:12
001,000000,200001,000000001
P1,1

Note5
If it is not Brazil version, it only can print under continuous transmition.

If it is Brazil version, under decimal units mode, FnC 11 = Pr int and rS 1CH = n_PLuS, it can print out. It is not available on counting mode.

Transformat as followed:
S,GGG .GGG ,TTT .TTT,NNN.NNN
S = 0:stable 1: unstable
G = gross weight
T = tare + pre-tare
N = net weight

For example:

tare 1 kg, net weight 0.2key, gross weight 1.2 kg , stable, then show as followed:

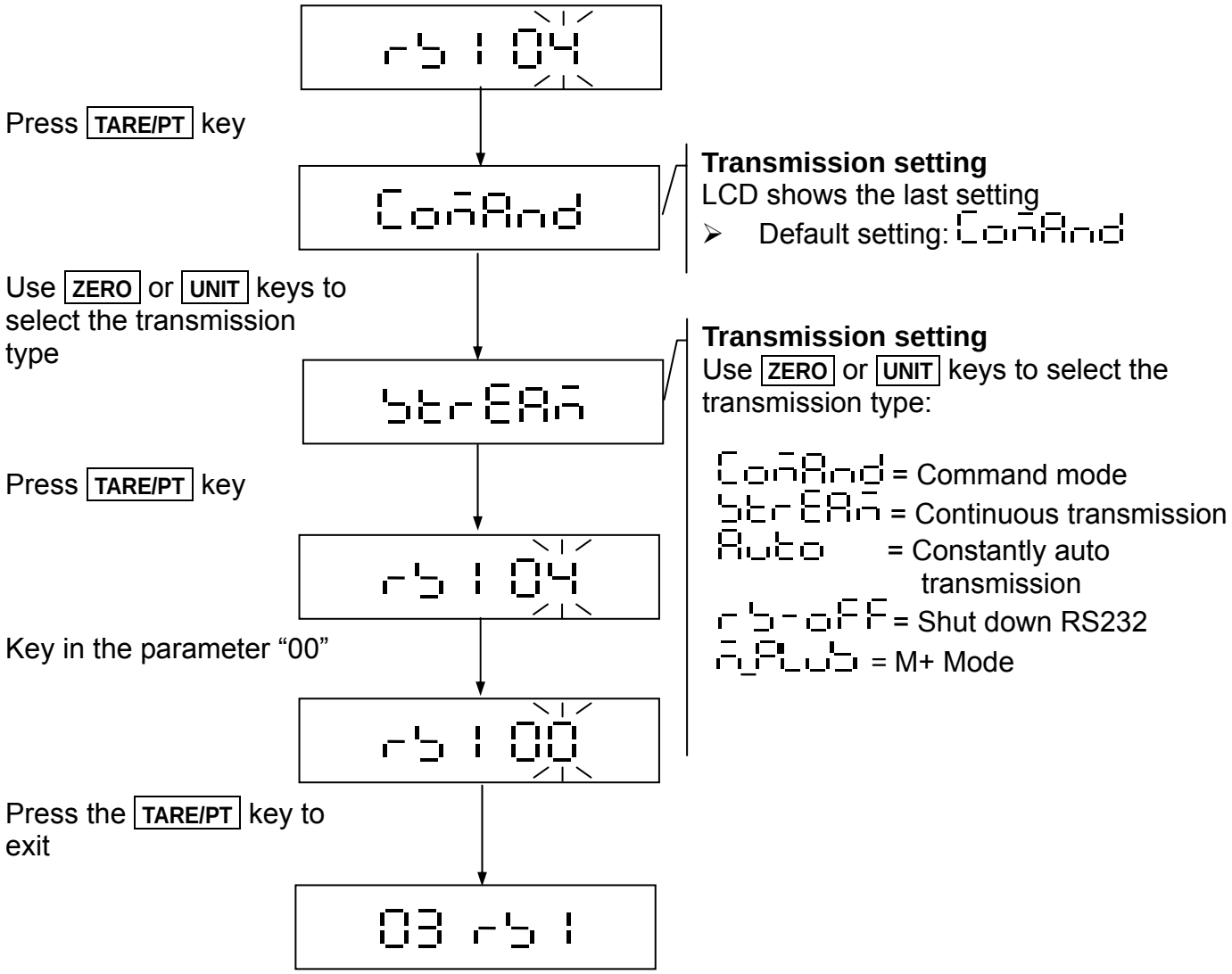
0,001.200,001.000,000.200

Take off the weight then show as followed:

0,000.000,001.000,-01.000

2-3-4 Continuous Transmission Settings rs104

Select rs104 in the RS232 serial interface setting mode 03 rs1 to set the Continuous Transmission status.



ZERO key ⇒ Upward key (0~9 digit entry)

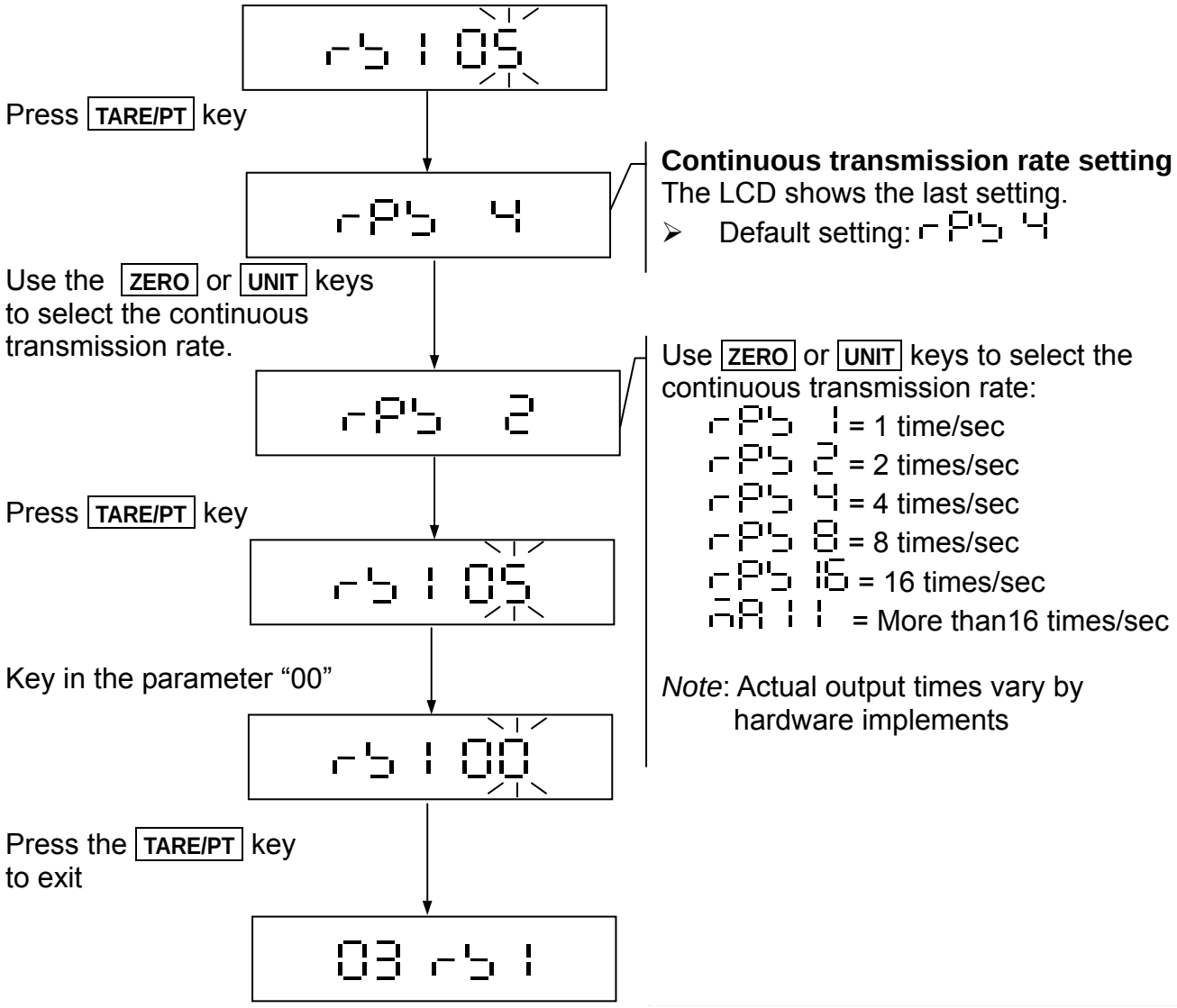
UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-3-5 Selection of the Continuous Transmission Rate rs105

Select rs105 in the RS232 serial interface setting mode 03 rs1 to set the Continuous Transmission Rate.



Continuous transmission rate setting
The LCD shows the last setting.

- Default setting: rPS 4

Use ZERO or UNIT keys to select the continuous transmission rate:

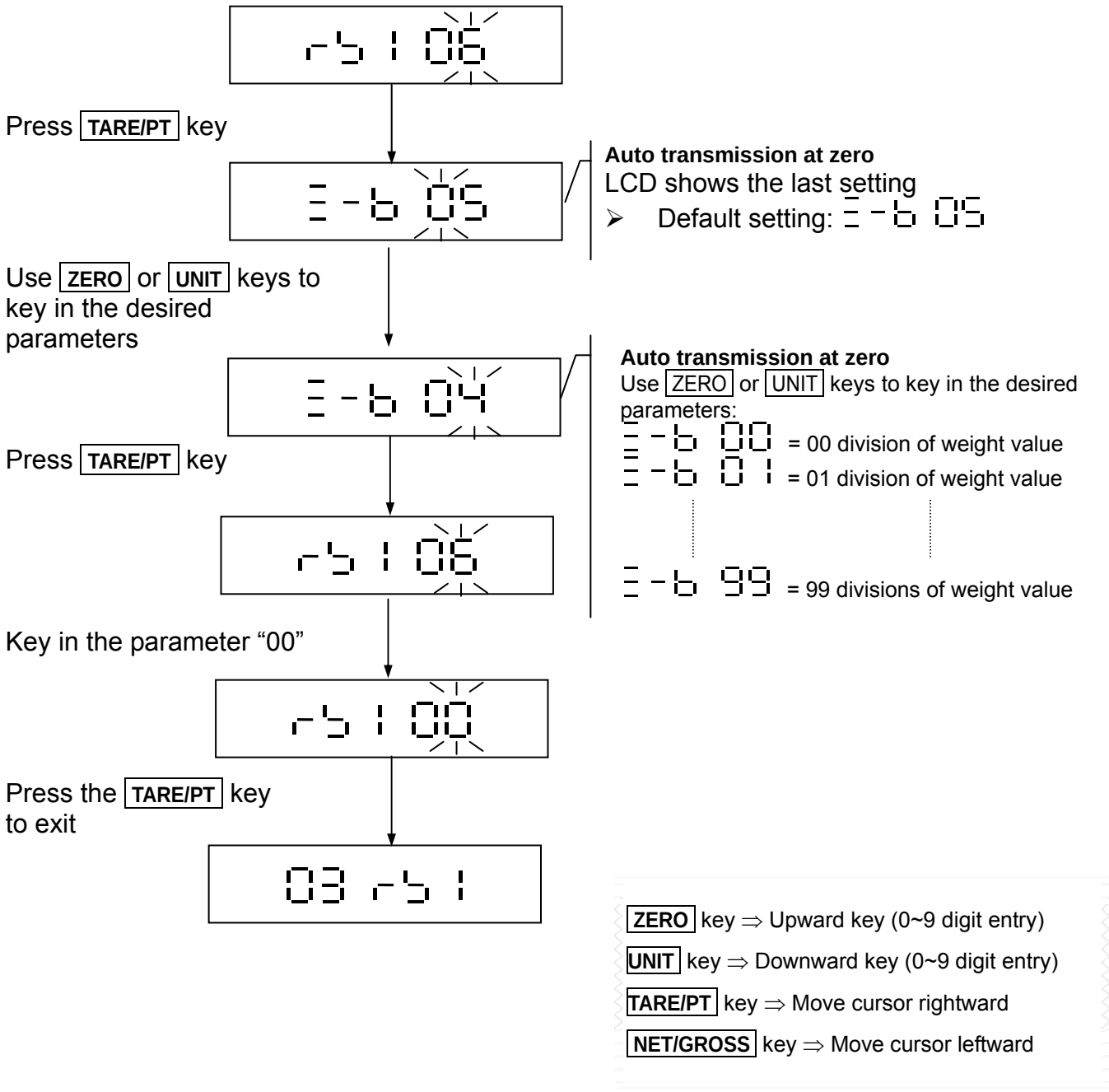
- rPS 1 = 1 time/sec
- rPS 2 = 2 times/sec
- rPS 4 = 4 times/sec
- rPS 8 = 8 times/sec
- rPS 16 = 16 times/sec
- nAII = More than16 times/sec

Note: Actual output times vary by hardware implements

ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

2-3-6 Auto Transmission at Zero r5 i 06

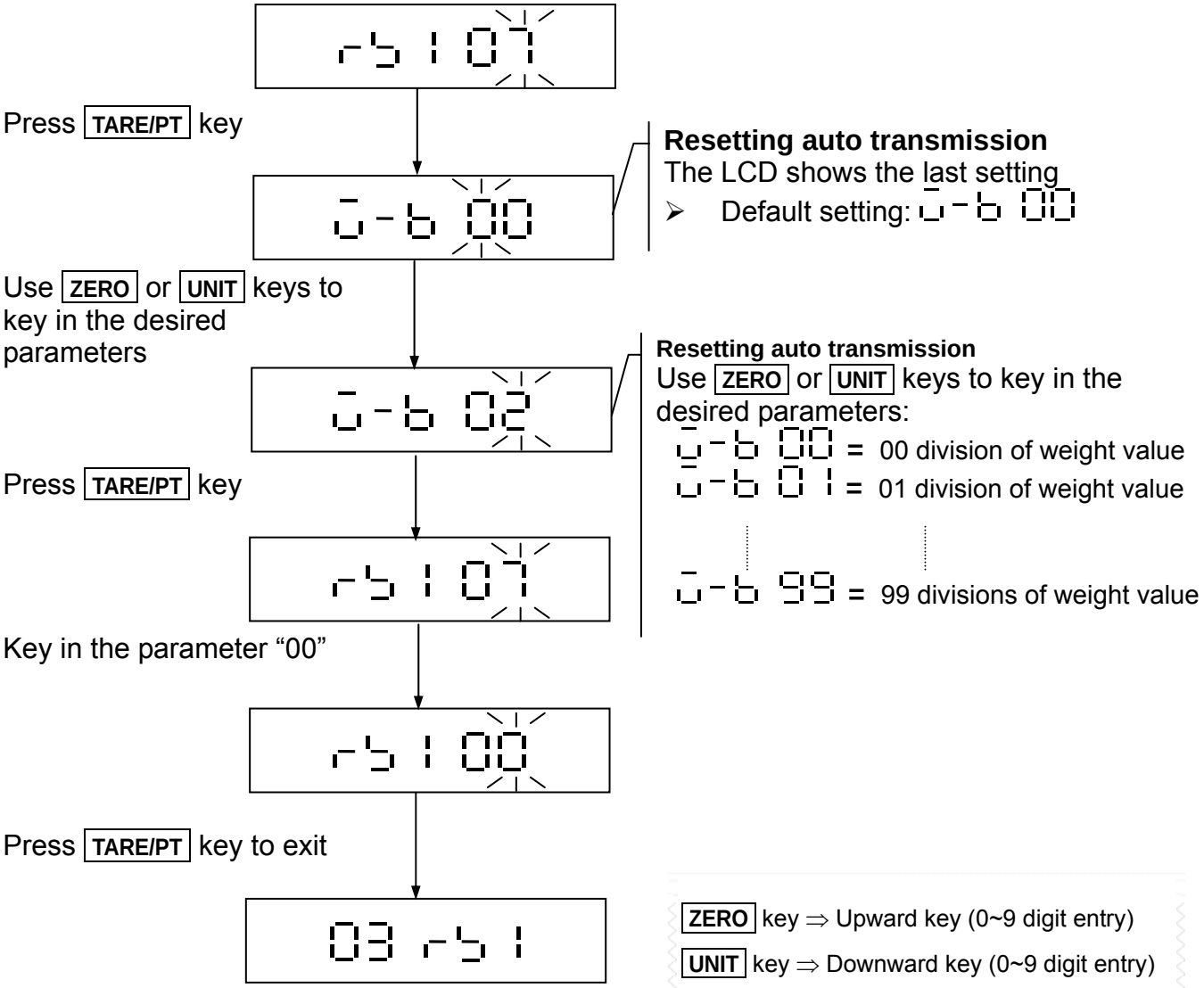
Select r5 i 06 in the RS232 serial interface setting mode 03 r5 i to set the Auto Transmission at Zero.


r5 i 06
Press TARE/PT key
Auto transmission at zero
LCD shows the last setting
➢ Default setting: E-b 05
E-b 05
Use ZERO or UNIT keys to key in the desired parameters
E-b 04
Auto transmission at zero
Use ZERO or UNIT keys to key in the desired parameters:
E-b 00 = 00 division of weight value
E-b 01 = 01 division of weight value
E-b 99 = 99 divisions of weight value
Press TARE/PT key
r5 i 06
Key in the parameter "00"
r5 i 00
Press the TARE/PT key to exit
03 r5 i
ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

- When the value of "Auto transmission at zero" set as u-b 00, the "Auto transmission at zero" function is not available. Because when the scale is at zero and keeping stable, the data are keeping transmitted, and that would be the same as "Continuous Transmission".

2-3-7 Reset Auto Transmission r5 1 07

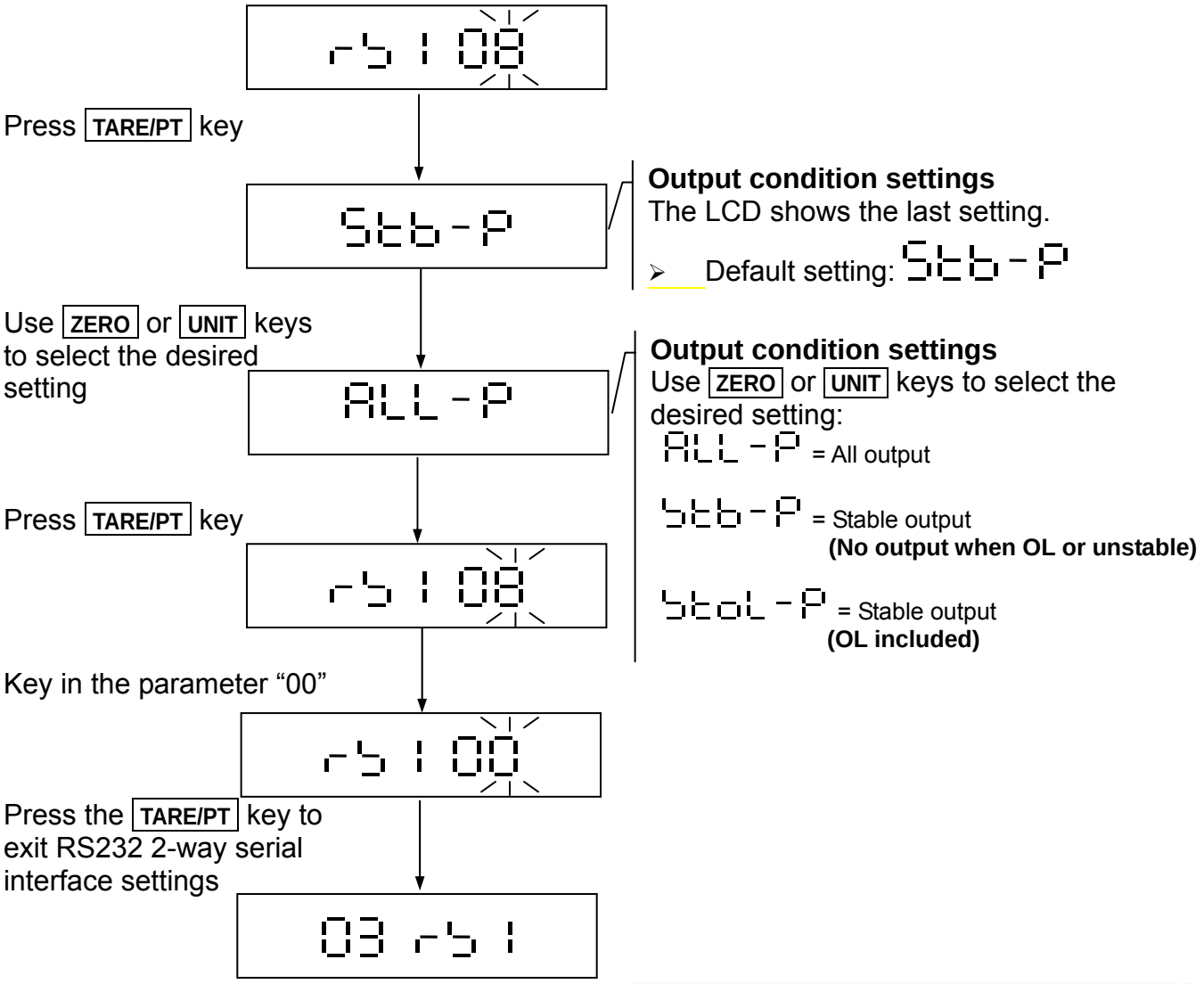
Select r5 1 07 in the RS232 serial interface setting mode 03 r5 1 to Reset Auto Transmission.


r5 1 07
Press TARE/PT key
Resetting auto transmission
The LCD shows the last setting
➢ Default setting: U-b 00
U-b 00
Use ZERO or UNIT keys to key in the desired parameters
Resetting auto transmission
Use ZERO or UNIT keys to key in the desired parameters:
U-b 02
U-b 00 = 00 division of weight value
U-b 01 = 01 division of weight value
U-b 99 = 99 divisions of weight value
Press TARE/PT key
r5 1 07
Key in the parameter “00”
r5 1 00
Press TARE/PT key to exit
03 r5 1
ZERO key ⇒ Upward key (0~9 digit entry)
UNIT key ⇒ Downward key (0~9 digit entry)
TARE/PT key ⇒ Move cursor rightward
NET/GROSS key ⇒ Move cursor leftward

When the value of “Auto transmission at zero” set as U-b 00, the “Auto transmission at zero” function is not available. Because when the scale is at zero and keeping stable, the data are keeping transmitted, and that would be the same as “Continuous Transmission”.

2-3-8 Output Condition Settings r5 1 08

Select r5 1 08 in the RS232 serial interface setting mode 03 r5 1 to Reset of Auto Transmission.


r5 1 08
Press TARE/PT key
Stb-P
Output condition settings
The LCD shows the last setting.
➢ Default setting: Stb-P
Use ZERO or UNIT keys to select the desired setting
ALL-P
Output condition settings
Use ZERO or UNIT keys to select the desired setting:
ALL-P = All output
Stb-P = Stable output
(No output when OL or unstable)
StaL-P = Stable output
(OL included)
Press TARE/PT key
r5 1 08
Key in the parameter "00"
r5 1 00
Press the TARE/PT key to exit RS232 2-way serial interface settings
03 r5 1

ZERO key ⇒ Upward key (0~9 digit entry)

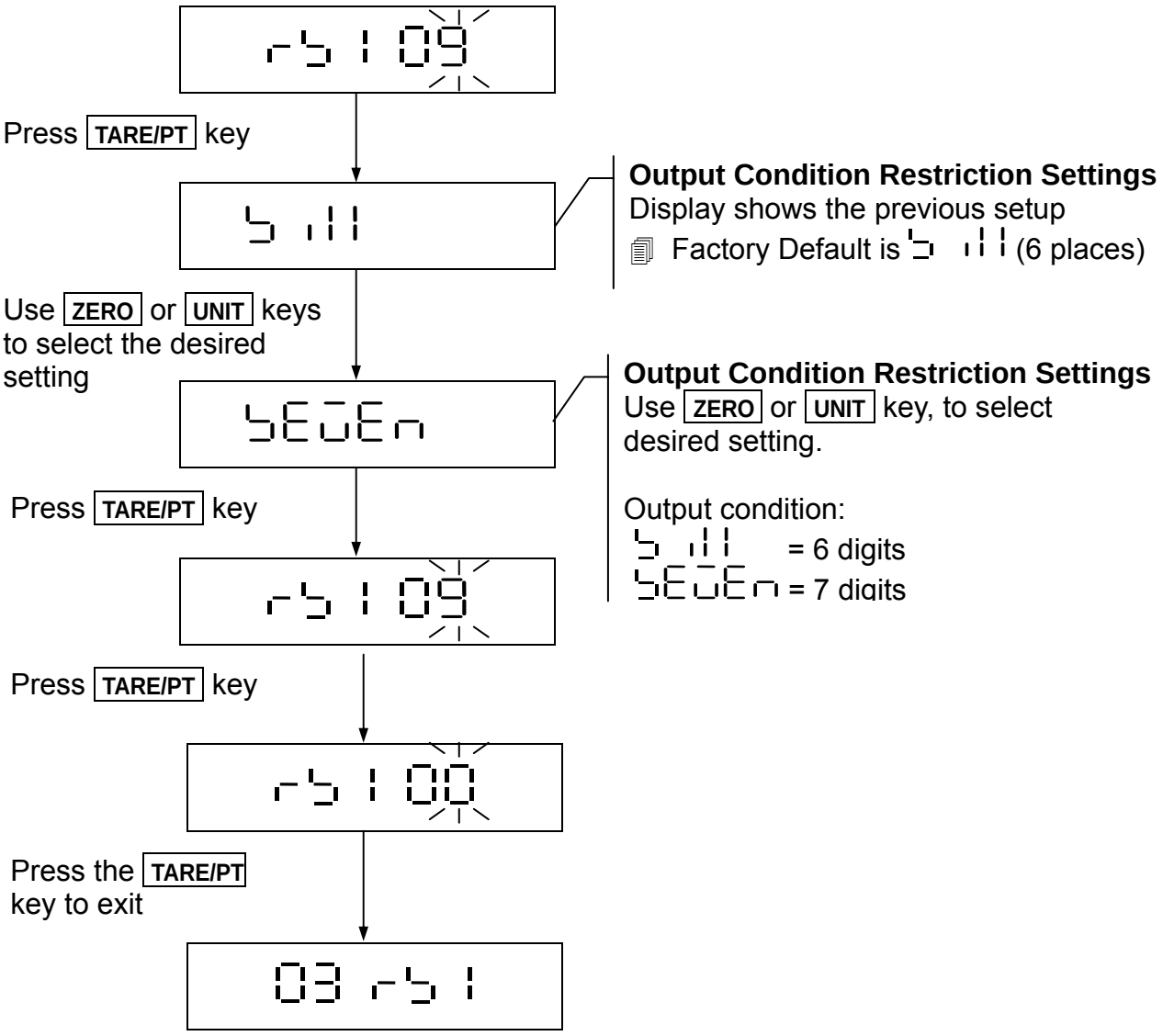
UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-3-9 RS232 6/7 Digits Setting r5 1 09

Select r5 1 09 in the RS232 serial interface setting mode 03 r5 1 to Reset of Auto Transmission.


r5 1 09
Press TARE/PT key
5 111
Output Condition Restriction Settings
Display shows the previous setup
Factory Default is 5 111 (6 places)
Use ZERO or UNIT keys to select the desired setting
5E5En
Output Condition Restriction Settings
Use ZERO or UNIT key, to select desired setting.
Output condition:
5 111 = 6 digits
5E5En = 7 digits
Press TARE/PT key
r5 1 09
Press TARE/PT key
r5 1 00
Press the TARE/PT key to exit
03 r5 1

ZERO key ⇒ Upward key (0~9 digit entry)

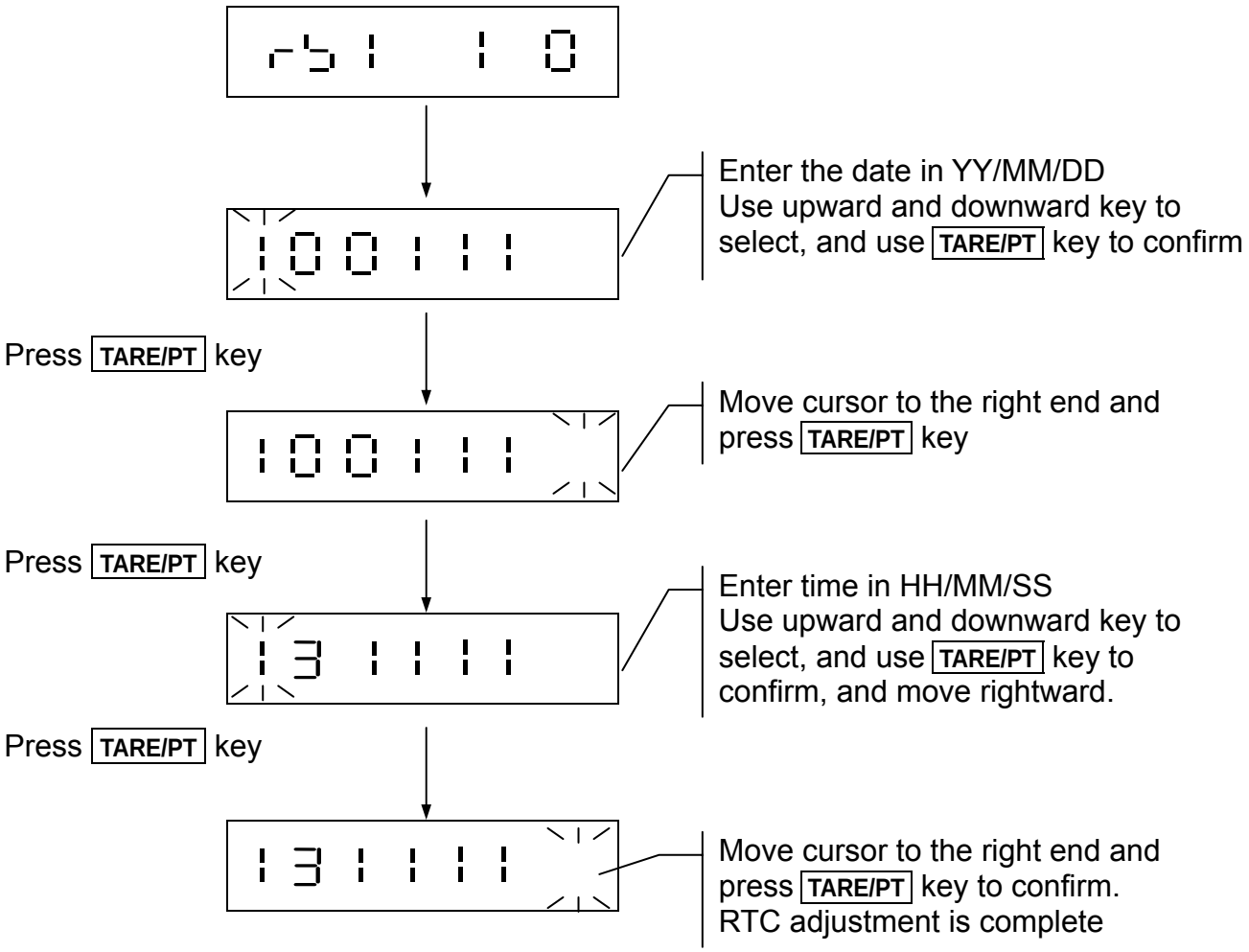
UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-3-10 RTC Adjustment

Select rS1 10 in the RS232 serial interface setting mode 03 rS1 to reset of Auto Transmission.


rS1 10
100111
Enter the date in YY/MM/DD
Use upward and downward key to select, and use TARE/PT key to confirm
Press TARE/PT key
100111
Move cursor to the right end and press TARE/PT key
Press TARE/PT key
131111
Enter time in HH/MM/SS
Use upward and downward key to select, and use TARE/PT key to confirm, and move rightward.
Press TARE/PT key
131111
Move cursor to the right end and press TARE/PT key to confirm.
RTC adjustment is complete

ZERO key ⇒ Upward key (0~9 digit entry)

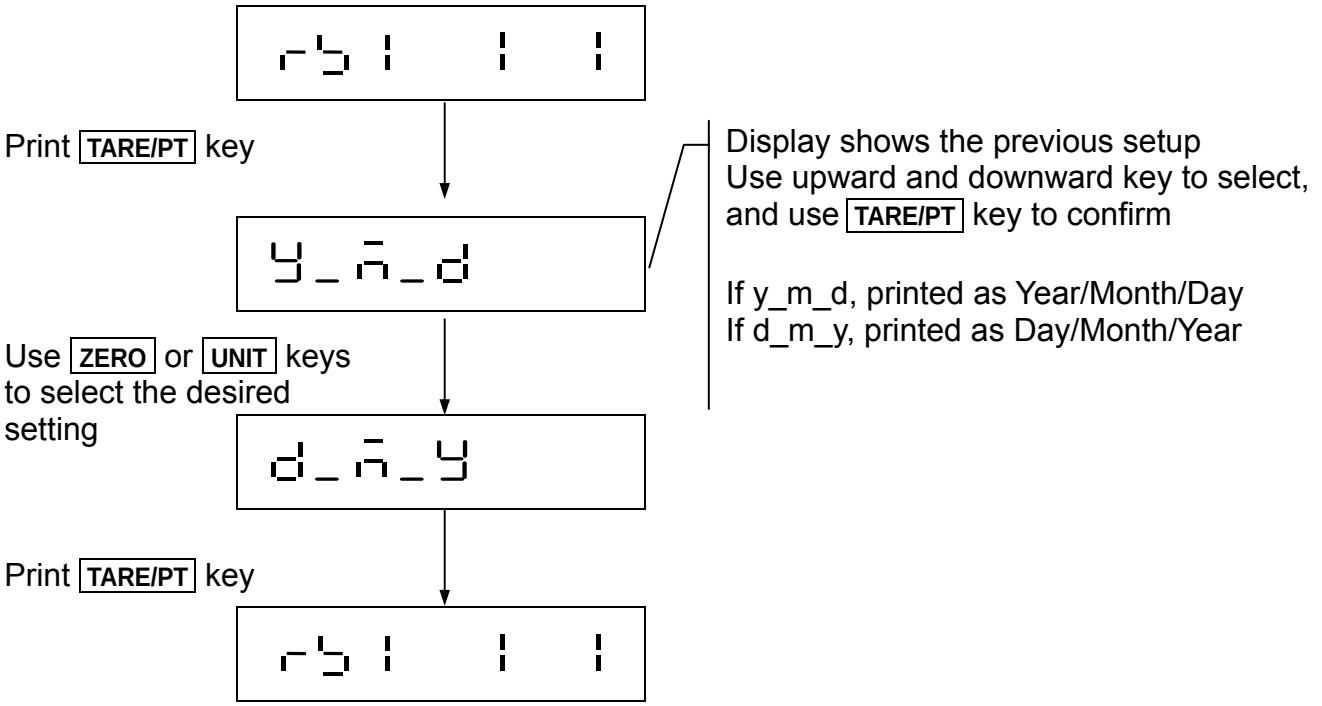
UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-3-11 Y/M/D Print Layout Selection r5 1 1 1

Select r5 1 1 1 in the RS232 serial interface setting mode 03 r5 1 to reset of Auto Transmission.


r5 1 1 1
Print TARE/PT key
y_m_d
Display shows the previous setup
Use upward and downward key to select, and use TARE/PT key to confirm
If y_m_d, printed as Year/Month/Day
If d_m_y, printed as Day/Month/Year
Use ZERO or UNIT keys to select the desired setting
d_m_y
Print TARE/PT key
r5 1 1 1

ZERO key ⇒ Upward key (0~9 digit entry)

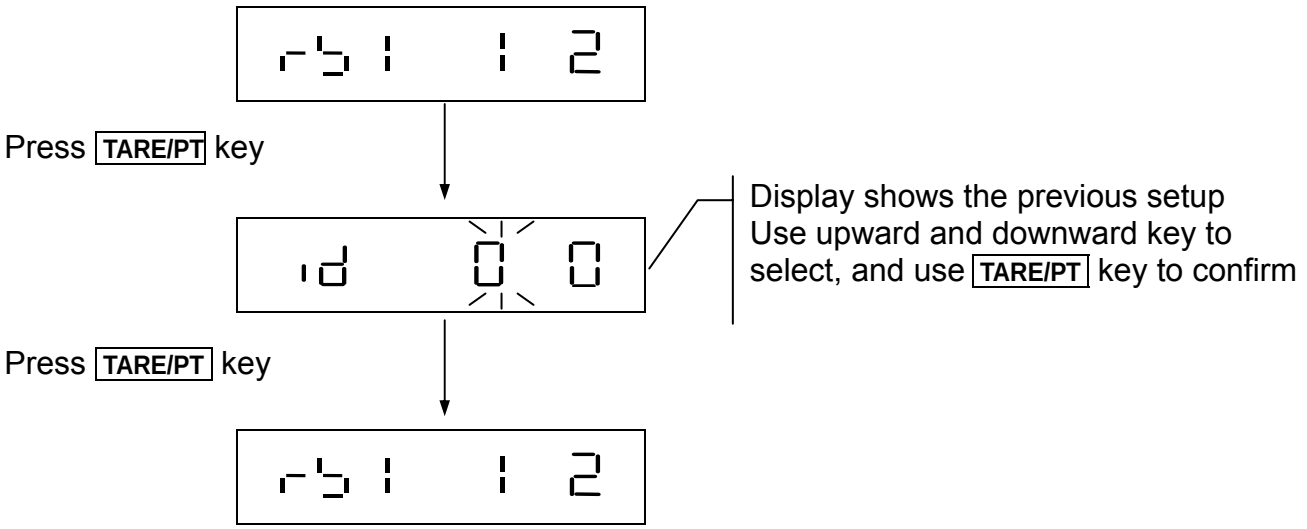
UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-3-12 RS485 ID Input (Option) r5 i 12

Select r5 i 12 in the RS232 serial interface setting mode 03 r5 i to reset of Auto Transmission.


r5 i 12
Press TARE/PT key
id 00
Display shows the previous setup
Use upward and downward key to
select, and use TARE/PT key to confirm
Press TARE/PT key
r5 i 12

ZERO key ⇒ Upward key (0~9 digit entry)

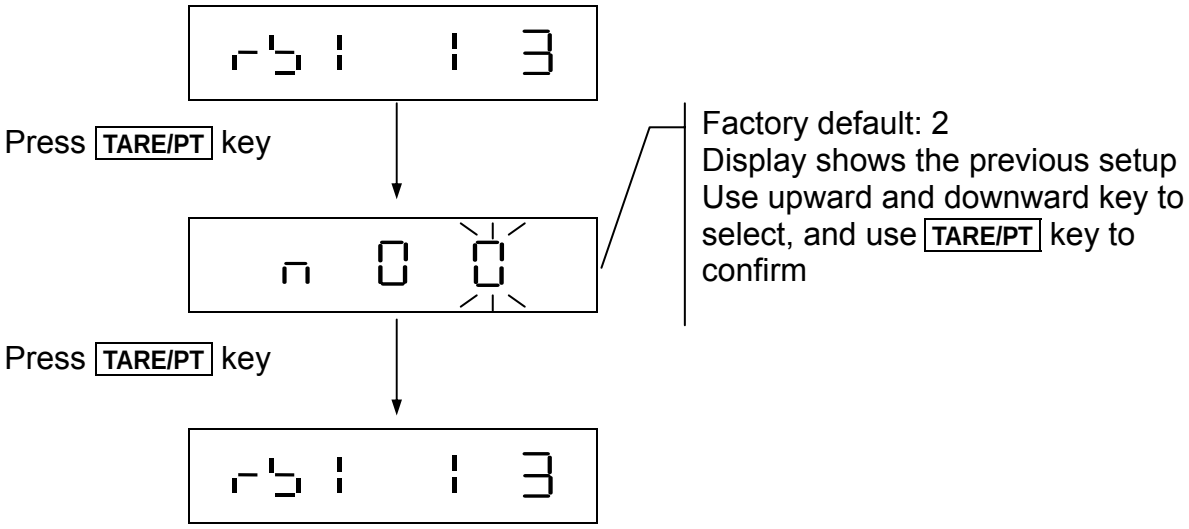
UNIT key ⇒ Downward key (0~9 digit entry)

TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

2-3-13 Line Feed Input r5 1 13

Line feed would be available only when r5 1 03 was set as 10 or 11.


r5 1 1 3
Press TARE/PT key
n 0 0
Factory default: 2
Display shows the previous setup
Use upward and downward key to select, and use TARE/PT key to confirm
Press TARE/PT key
r5 1 1 3

ZERO key ⇒ Upward key (0~9 digit entry)

UNIT key ⇒ Downward key (0~9 digit entry)

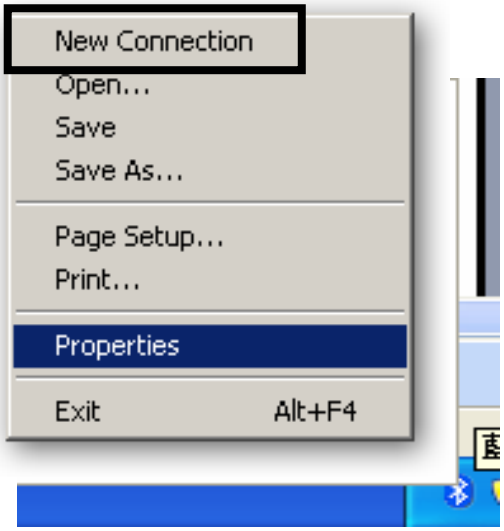
TARE/PT key ⇒ Move cursor rightward

NET/GROSS key ⇒ Move cursor leftward

CHAPTER 3 Wireless Connection Instruction

Step 1: Connect to your device

1. Enable Wireless on your computer. Right-click on the icon of the bottom-right corner on taskbar, highlight "**New Connection**" and left click.

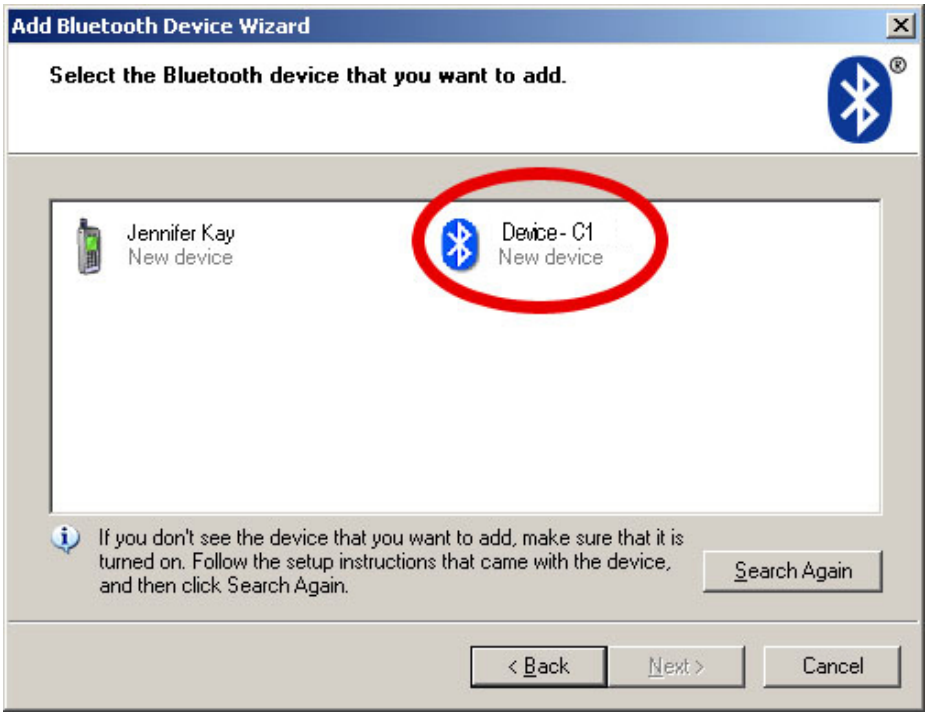


Due to the different bluetooth supplier software could be installed, the setting dialogs shown below are just for reference.

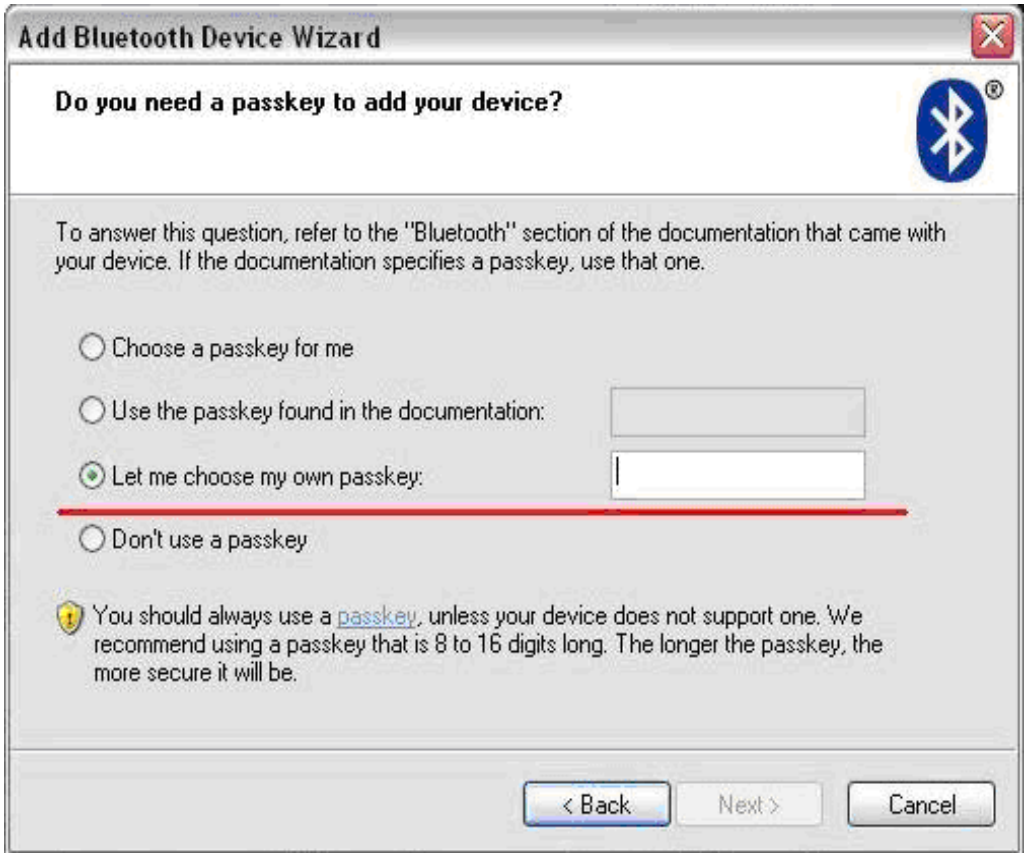
2. Check "**My device is set up and ready to be found**" in the dialogue box.

Add Bluetooth Device Wizard
Welcome to the Add Bluetooth Device Wizard
Before proceeding, refer to the "Bluetooth" section of the device documentation. Then set up your device so that your computer can find it:
- Turn it on
- Make it discoverable (visible)
- Give it a name (optional)
- Press the button on the bottom of the device (keyboards and mice only)
My device is set up and ready to be found.
Add only Bluetooth devices that you trust.
< Back
Next >
Cancel

3. If the device is ready, the device names **Device-C1 or C2** will be found. Double-click on Device-C1 or Device-C2.


Add Bluetooth Device Wizard
Select the Bluetooth device that you want to add.
Jennifer Kay
New device
Device - C1
New device
If you don't see the device that you want to add, make sure that it is turned on. Follow the setup instructions that came with the device, and then click Search Again.
Search Again
< Back
Next >
Cancel

4. Circle "**Let me choose my own passkey**", input the passkey "111111" and click "**Next >** " button


Add Bluetooth Device Wizard
Do you need a passkey to add your device?
To answer this question, refer to the "Bluetooth" section of the documentation that came with your device. If the documentation specifies a passkey, use that one.
Choose a passkey for me
Use the passkey found in the documentation:
Let me choose my own passkey:
Don't use a passkey
You should always use a passkey, unless your device does not support one. We recommend using a passkey that is 8 to 16 digits long. The longer the passkey, the more secure it will be.
< Back
Next >
Cancel

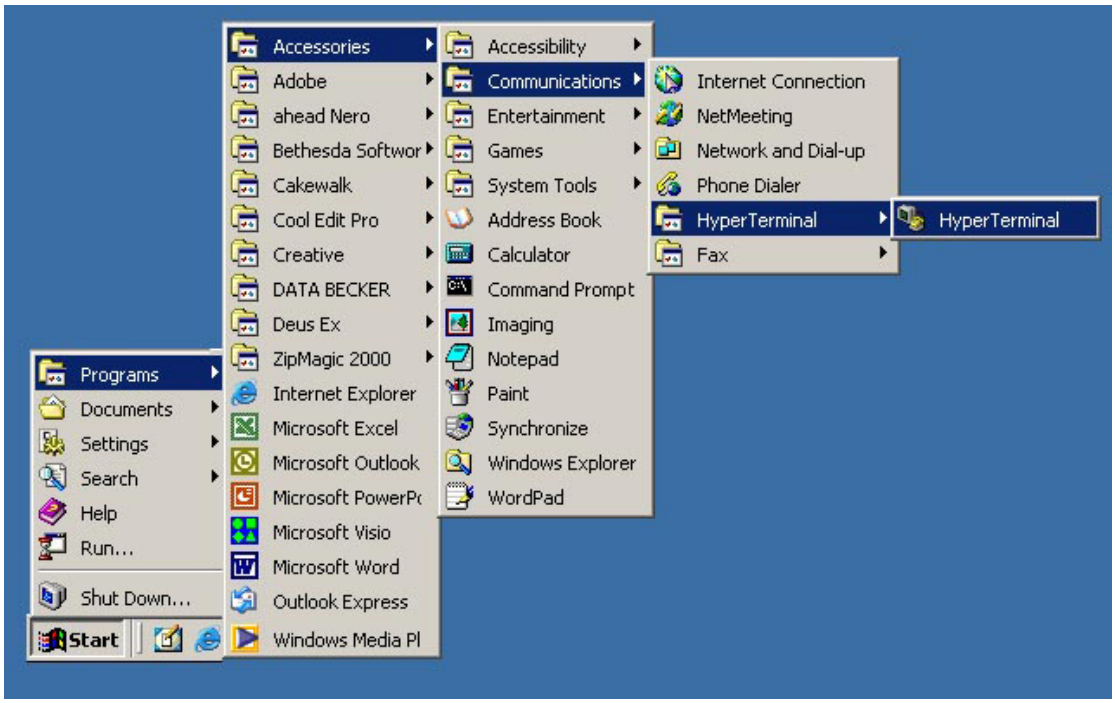
5. Device is added so far. Please disconnect COM port and click “**Finish**.”

Add Bluetooth Device Wizard
Completing the Add Bluetooth Device Wizard
The Bluetooth device was successfully connected to your computer. Your computer and the device can communicate whenever they are near each other.
These are the COM (serial) ports assigned to your device.
Outgoing COM port: COM14
Incoming COM port: COM15
Learn more about Bluetooth COM ports.
To close this wizard, click Finish.
< Back
Finish
Cancel

Step 2: Connection test

To test the connection, use **HyperTerminal** recommended in Windows XP

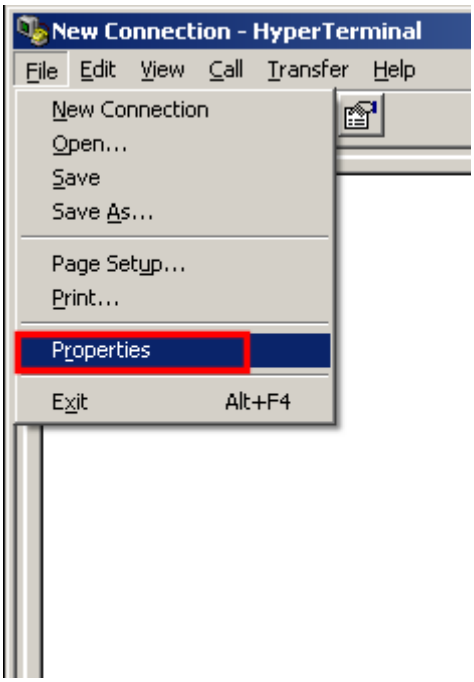
1. go “**START**” → “**All programs**” → “**Accessories**“→ “**Communications**“→ “**HyperTerminal**”



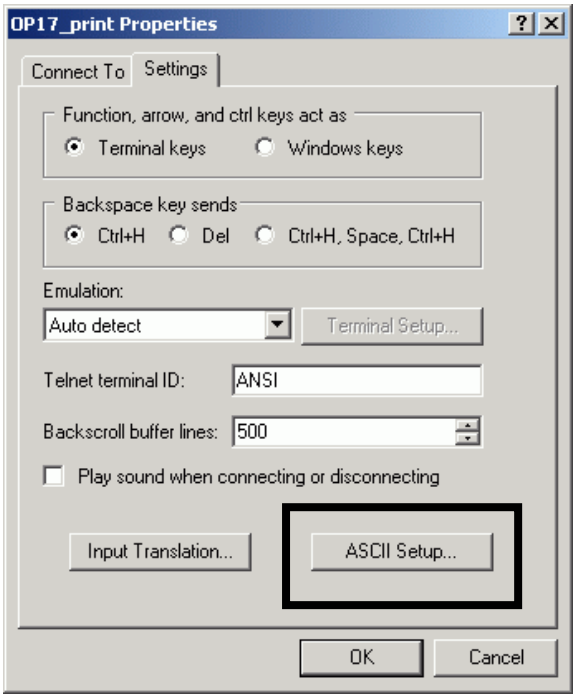
2. Key in a name and select icon, then press “**OK**.”

3. After select the COM port referred by step 1 point 5 and click “**OK**.”

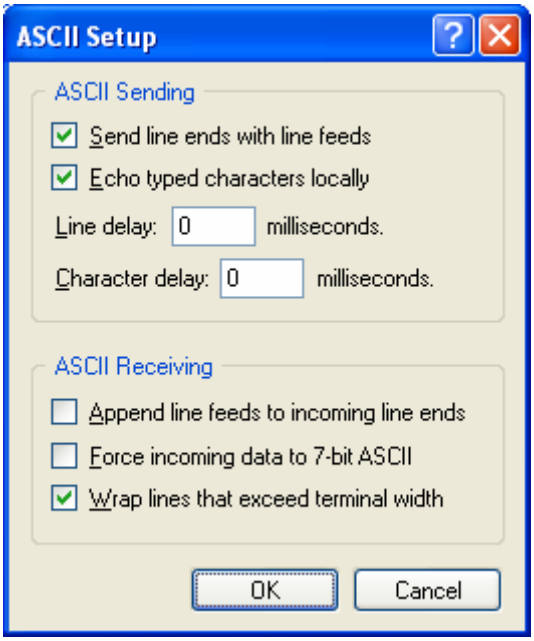
4. Click “**File**” → “**Properties**”



5. Select “**settings**” from the menu, and click “**ASCII setup**” on the bottom of the box.



6. Check "**Send line ends with line feeds**" and "**Echo typed characters locally**" and click "**OK**".



7. Key in commands such **RW**, **MZ**, and **RG** in the main screen to test...

Command Mode

On RS485 command mode, the format is as following,

1. If RS485's ID setting is 0(RS1 12), and the command is the same as regular RS232.

2.

A. If RS485's ID setting is not 0(assume 99),"@ID" has to be added in front of every command. If you wish to command a zero-return, the complete command is @99MZY, then press "ENTER" key

B. If there is an error on entered command, letter "E" will show up + "Unidentified Command"

e.g. @99MZZ
The response message is => 99E1MZZ

3. RS485 responses only to machines of identified ID code

Command Format A

Host | Command |
Slave | Command |

MZ	Zero	SO	Command mode
MT	Tare	UA	Switch to the first unit
MG	Gross weight	UB	Switch to the second unit
MN	Net weight	UC	Switch to the third unit
CT	Clear TARE value	UD	Switch to the forth unit
SC	Continuous transmission	UE	Switch to the fifth unit
SA	Auto transmission	UF	Switch to the sixth unit
%	Stop continuous transmission and enter the command mode		

Note: UA ~ UF settings are depended on the model of the scale

Command Format B

Host | Command |
Slave | Data |

RW	Read current weight	RH	Read Gross (simple)
RG	Read Gross weight	RI	Read Net (simple)
RN	Read Net weight	RJ	Read comparison situation + current display of weight (simple)
RT	Read TARE	RK	Read comparison situation + Gross (simple)
RB	Read current display of weight (simple)	RL	Read comparison situation + Net (simple)

Note: a. add % before the command to read continuously
b. add # before the command to transmit a stable value

RJ,RK,RL Command Description

If RL command entered, and
if weight is higher than HI (FNC 03 setting), and if the current weight is 10 kg, the following will be displayed: “100+ 10.000”

If weight is higher than HI (FNC 03 setting), and if the current weight is 0.5 kg, the following will be displayed: “001+ 0.500”

If weight is between HI and LOW, and if the current weight is 1 kg, the following will be displayed: 010+ 1.000

Read weight comparison setting value RS○○□□

○○: Groups(00 ~ 09) □□: Setting Items

HI	**Show “HI” presetting value**
LO	**Show “LO” presetting value**

Note : ○○(Group) is various depended on different models

00 ⇒ The first group
01 ⇒ The second group
02 ⇒ The third group

EX: RS02LO＜CR＞＜LF＞ Show “LO” presetting value
ANS: RS02LOXXXXXX＜CR＞＜LF＞

Command Format C

Host Command+ Data
Slave Command+ Data

Write weight comparison setting value WS○○□□XXXXXX

○○: Groups(00 ~ 09) □□: Setting Items XXXXXX: Setting Value

HI	**Write “HI” setting value**
LO	**Write “LO” setting value**

Note : ○○ (Group) is various depended on different models

00 ⇒ The first group
01 ⇒ The second group
02 ⇒ The third group

EX: WS00HI001000＜CR＞＜LF＞ Write “HI” setting value
ANS: WS00HI001000＜CR＞＜LF＞

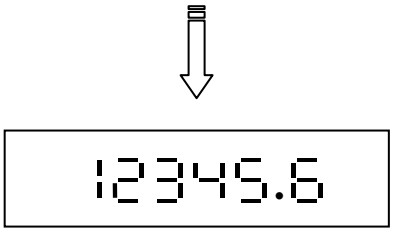
Command Format D

Host | Data |

Slave

Value (e.g. Price)						Position of decimal point	CR	LF
1	2	3	4	5	6	1		

When the Slave receives this data format, it will transfer the data and display it on its LCD.



Note: The function is effective when the weight value is over 0.

- The above 4 (ABCD) command formats are RS232 bi-directional. There are the following error messages received by Slave terminal (scale).

Error messages:

E1: Wrong command
E2: Command format error (Wrong parameters)
E3: Command not recognised

Output data format

1. 7 places (first decimal place not included)

Weight format

Gross	S	T	,	G	S	,	+	0	1	2	3	4	5	6	7	SP	SP	o	z	CR	LF
Net	S	T	,	N	T	,	+	1	.	2	3	.	4	5	6	t	l	.	g		
Tare	S	T	,	T	R	,	+	0	1	2	.	3	4	5	6	SP	SP	k	g		
Plus OL	O	L	,	G	S	,	+	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		
Minus OL	O	L	,	G	S	,	-	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		
Unstable	U	S	,	G	S	,	+	0	1	2	3	4	.	5	6	SP	SP	l	b		

Simple format

G/N	+	1	.	2	3	.	4	5	6	CR	LF
G/N	+	0	1	2	3	4	5	.	6		
G/N	+	0	1	2	.	3	4	5	6		
Plus OL	+	SP	SP	SP	SP	SP	SP	SP	SP		
Minus OL	-	SP	SP	SP	SP	SP	SP	SP	SP		

Comparison status + Simple format

Byte0	Byte1	Byte2	+/-	1	.	2	3	.	4	5	6	CR	LF

Byte0 : HI 30H/31H
Byte1 : OK 30H/31H
Byte2 : LO 30H/31H

2. 6 places (first decimal place not included)

Weight format

Gross	S	T	,	G	S	,	+	1	2	3	4	5	6	7	SP	SP	o	z	CR	LF
Net	S	T	,	N	T	,	+	.	2	3	.	4	5	6	t	l	.	g		
Tare	S	T	,	T	R	,	+	1	2	.	3	4	5	6	SP	SP	k	g		
Plus OL	O	L	,	G	S	,	+	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		
Minus OL	O	L	,	G	S	,	-	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		
Unstable	U	S	,	G	S	,	+	1	2	3	4	.	5	6	SP	SP	l	b		

Simple format

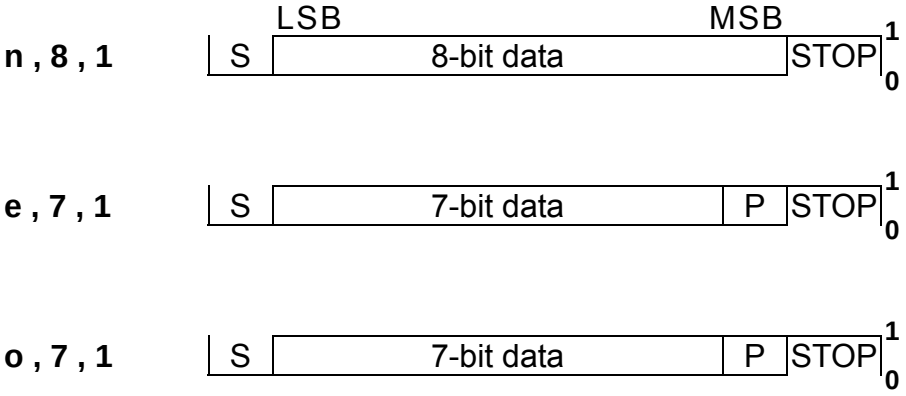
G/N	+	.	2	3	.	4	5	6	CR	LF
G/N	+	1	2	3	4	5	.	6		
G/N	+	1	2	.	3	4	5	6		
Plus OL	+	SP	SP	SP	SP	SP	SP	SP		
Minus OL	-	SP	SP	SP	SP	SP	SP	SP		

Comparison status + simple format

Byte0	Byte1	Byte2	+/-	.	2	3	.	4	5	6	CR	LF

Byte0 : HI 30H/31H
Byte1 : OK 30H/31H
Byte2 : LO 30H/31H

Serial Data Transfer/Receive Format



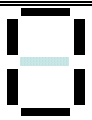
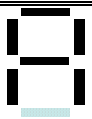
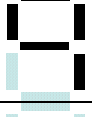
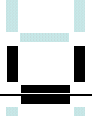
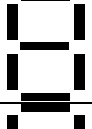
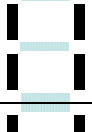
Note:

S : Start bit
STOP: Stop bit
P : Parity bit

APPENDIX I: ASCII CODE TABLE

Symbol	ASC II Code	Symbol	ASC II Code	Symbol	ASC II Code
A	41H	a	61H	0	30H
B	42H	b	62H	1	31H
C	43H	c	63H	2	32H
D	44H	d	64H	3	33H
E	45H	e	65H	4	34H
F	46H	f	66H	5	35H
G	47H	g	67H	6	36H
H	48H	h	68H	7	37H
I	49H	i	69H	8	38H
J	4AH	j	6AH	9	39H
K	4BH	k	6BH	↵	0DH
L	4CH	l	6CH		
M	4DH	m	6DH		
N	4EH	n	6EH		
O	4FH	o	6FH		
P	50H	p	70H		
Q	51H	q	71H		
R	52H	r	72H		
S	53H	s	73H		
T	54H	t	74H		
U	55H	u	75H		
V	56H	v	76H		
W	57H	w	77H		
X	58H	x	78H		
Y	59H	y	79H		
Z	5AH	z	7AH		

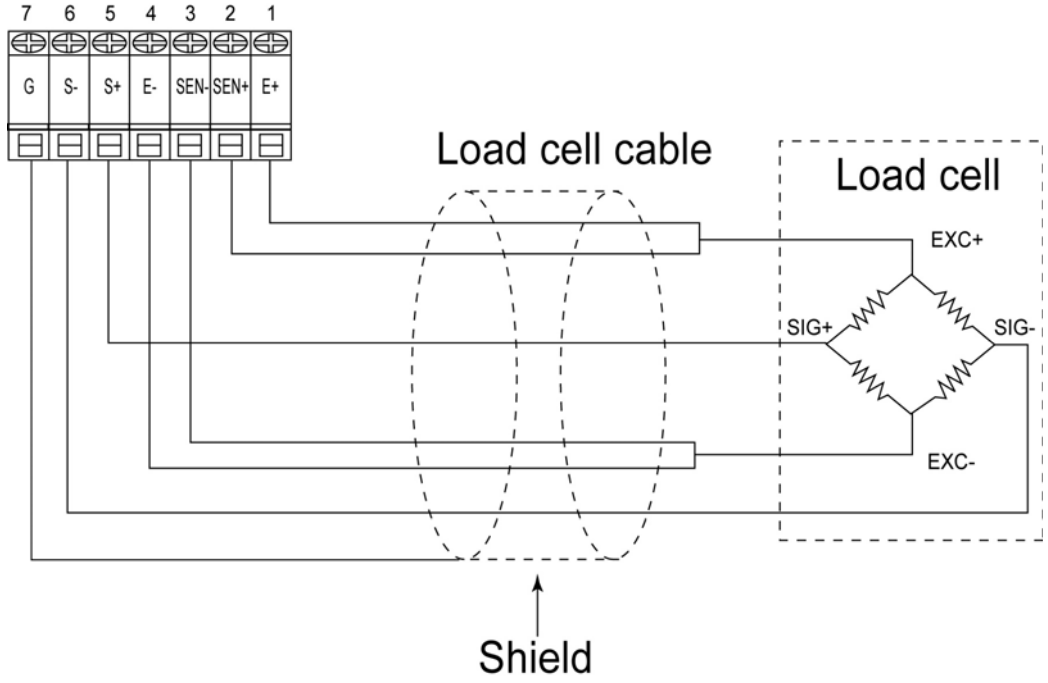
APPENDIX II: 7 SEGMENT DISPLAY CHARACTERS

Digit	7 segment letter	Alphabet	7 segment letter	Alphabet	7 segment letter
0		A		N	
1		B		O	
2		C		P	
3		D		Q	
4		E		R	
5		F		S	
6		G		T	
7		H		U	
8		I		V	
9		J		W	
		K		X	
		L		Y	
		M		Z	

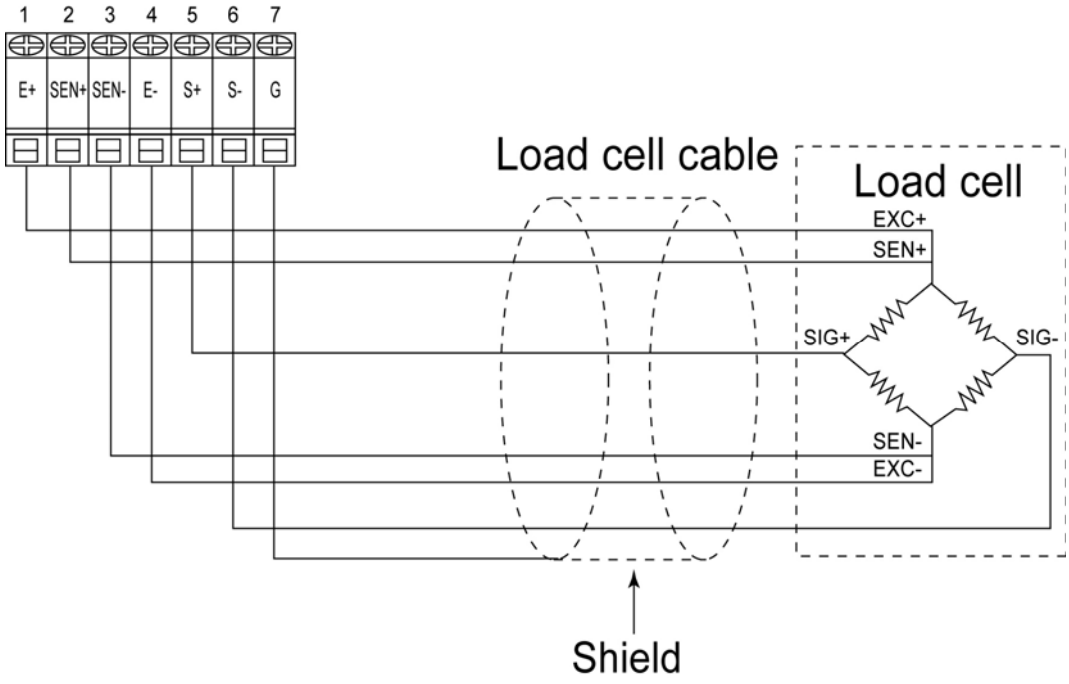
APPENDIX III: Wiring Instructions

Load cell wiring method

(1) As shown below, when a load cell is connected with a 4PIN cable, SEN+ and SEN- can be unconnected. J11 and J12 on PCB must be tin-soldered in short circuit.

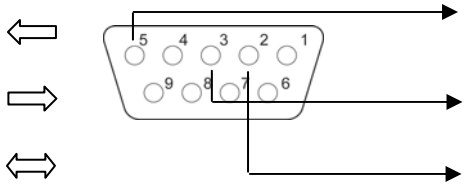


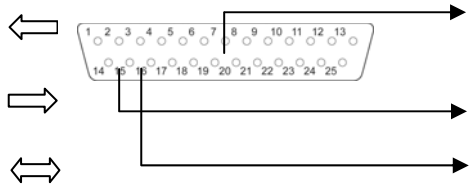
(2)If Load Cell is 6PIN, please wire as the following diagram:



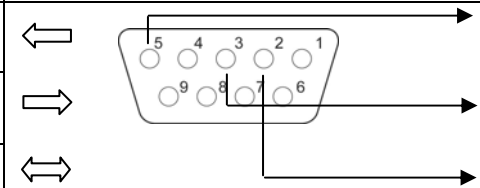
RS232 wiring instruction

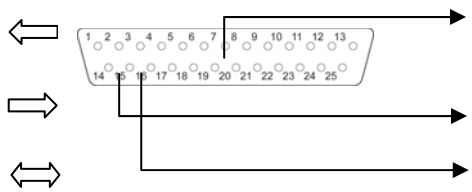
To connect RS232, please open the housing, RS232's PIN connectors locate on the bottom-right corner of the main board. The most common connection method is using 9PIN and 25PIN, as shown below:

PC	PIN	Function	Female 9 PINS	Function	QW
	2	Transmit Data		SG	
	3	Receive Data		RxD	
	5	Signal Ground		TxD	

Printer	PIN	Function	Male 25 PINS	Function	QW
	2	Receive Data		SG	
	3	Transmit Data		RxD	
	7	Signal Ground		TxD	

RS485 wiring instruction

PC	PIN	Function	Female 9 PINS	Function	QW
	2	Transmit Data		SG	
	3	Receive Data		DA	
	5	Signal Ground		DB	

Printer	PIN	Function	Male 25 PINS	Function	QW
	2	Receive Data		SG	
	3	Transmit Data		DA	
	7	Signal Ground		DB	

To use other connection methods, please identify the signal and following the above principles. After it is finished, please install the housing by the instruction in the *SPECIAL NOTICE.*